# THE MARINE RECORD.

DEVOTED TO COMMERCE, ENGINEERING AND SCIENCE.

$2.00 PER YEAR. ESTABLISHED 1878. 10c. SINGLE COPY.

VOL. XVIII. CLEVELAND, OHIO, AUGUST 8, 1895. NO. 32


## A NEW DETROIT STEAM-YACHT.

The steel steam-yacht Cynthia was launched last Saturday at the yard of the Detroit Boat Works, which built her for Mr. M. B. Mills, of Detroit. The yacht stuck on the ways and in the mud, but was not injured, and a tug pulled her into deep water. She was christened by Mr. Mills' sister, Mrs. W. H. M. Smith, in honor of their mother.

The Cynthia, when completed, will represent an outlay of $75,000. Her lines are clean and sharp, and her interior furnishes every comfort, reflecting great credit upon her designer, Mr. Fred W. Ballin. She is 132 feet long over all, 110 feet on the water line, with 17½ feet beam, and 8 feet 9 inches molded depth. She will be schooner rigged, with clipper bow, is built flush-decked, with metal bulwarks one foot high, and netted taffrail above. The hull is of the best quality open hearth steel with three water-tight bulkheads, one at the bow, and one forward and one aft of the machinery. Her triple expansion engine measures 10, 16 and 26 inches diameter. Her boilers are of an improved water-tube type. She has full equipment of surface condenser, air and circulating pumps, boiler feed pumps, blower engines, and electric lighting plant. She is expected to make 18 miles an hour.

A large deck-house forward will contain a dining room and a smoking room. Below there is a large saloon, both being finished with the greatest care. There are a number of well furnished staterooms, and a very complete steward's department. She will be ready for use in time for Mr. Mills and his friends to make one long lake cruise this season.

## ROBERTS BOILERS IN THE UNIQUE.

The two Roberts safety water tube boilers which will be placed in the Unique are to be completed and shipped to the lakes by October 1. They are of the same size as the tubulous boilers of two previous makes which have been tried in this boat and taken out. The boilers are being built to suit the space in the boat, and they are expected to furnish 1,000 horse power to the quadruple expansion engines of the Unique. It is stated that Mr. McElroy has always wanted to place the Roberts boilers in the Unique, but has been overruled by other stockholders. The Roberts Co. has uniformly declined to put up forfeit money, or to resort to other such expedients to secure a contract, and these boilers were sold with no string attached save that the owners of the Unique were at liberty to return the boilers if they failed to prove satisfactory.

## NAVAL EXHIBITION AT KIEL.

Kiel is to have another international naval exhibition. This will be held from May 25 to Sept. 30, 1896. Reporting upon this matter, Consul Robertson, located at Hamburg, says: "The grounds chosen for the exhibition are beautifully situated along the shore of the bay of Kiel, and with a splendid view of the harbor of Kiel. They close to the eastern entrance of the newly opened canal, measure about 350,000 square meters. Large exhibition buildings and small pavilions will be erected, as well as open and half-covered galleries. The naval exhibition is to comprise all articles in any way connected with the navy or shipping in general, as well on the seas as on rivers or canals. It is also to give a complete historical review of the development and progress made in shipbuilding and its kindred industries. The waters of the harbor of Kiel offer excellent opportunity for showing steam or electric launches, sailing yachts, rowing boats, etc. The official programme will be ready in September next." The naval exhibition will be given in connection with an industrial exposition of the province of Schleswig-Holstein.

## SECRETARY CARLISLE ON THE LAKES.

Secretary John G. Carlisle, of the Treasury Department, and party left Chicago Saturday for a lake cruise. They embarked on the United States lighthouse steamer Amaranth, which is in charge of Commander W. W. Meade during the trip. The steamer left direct for lake Superior, and will then come down Lakes Huron and Erie, probably stopping at Cleveland to see what has been done on the lighthouse tender John G. Carlisle, on which construction has begun at the Globe yard. Little will be seen of her in the yard, however, for the work done so far is largely inside preparatory work. The Amaranth may go to Lake Ontario, in which case the Secretary will disembark at Ogdensburg,

## A DANGEROUS WEAPON.

In experiments recently carried on at the naval school at Newport, a Lay torpedo boat thirty feet long was provided, and in it placed two cats, two pigeons and two rabbits. This was submerged fifteen feet in water fifty feet deep. A small torpedo containing seventy pounds gun cotton was then submerged to an equal depth 450 feet distant and exploded. Upon examining the place where the torpedo boat had been, large bubbles of air were found issuing to the surface, showing that that it had been destroyed and was sinking. It was estimated that the boat would stand a pressure of eighty pounds per square inch surface. Such results are hardly encouraging to those who, in time of war, are expected to go inside a torpedo boat, and place torpedoes under an enemy's ship. A premature explosion running into torpedoes which the enemy may have set out to guard his line or failure to get away before the explosion of torpedoes sent against the enemy's ship, would mean the death of all on board.

## NEWLY ENROLLED TONNAGE.

Following is a list of lake vessels to which official numbers and signal letters have been assigned by the Commissioner of Navigation, for the week ended July 27:

| Official No. | Rig. | Name. | TONNAGE. Gross. | Net. | Home Port. | Where Built. |
|---|---|---|---|---|---|---|
| 127,100 | St. s. | Cambria | 48.32 | 24.16 | Milwaukee. | Oshkosh. |
| 86,323 | " | Geo. Farwell | 750.86 | 599.40 | Detroit. | Marine City. |
| 20,610 | " | Quêen Anne | 14.53 | 9.88 | Detroit. | Detroit. |
| 161,758 | " | Victory | 3,774.90 | 3,339.90 | Cleveland. | Chicago. |

## PROPELLED BY THE WAVES.

A strange craft devised by a San Francisco man is now afloat in San Francisco Bay. The remarkable feature of the thing is that it is designed to make the water on which it floats do double duty, both that of buoying it up and that of propelling it. Other means of progress it has none.

The contrivance is not unlike a dredge in appearance. As it goes along the paddle wheels at the sides plash the water and various cranks and bars and shafts aloft move rhythmically. The boat is a wave motor, and is designed as a perpetual motion boat, although the possibility of a dead calm has apparently not been taken into consideration. Two flat bottomed scows are fastened end on by a huge hinge from the boat. When the scows rock in the waves the force of their rocking is communicated to a lever which moves a fly wheel, which in turn moves the paddle wheels, and there you are. So long as the waves endure the boat goes, and the higher the waves rise the greater the motive power of the boat. There was one disadvantage about the thing as originally devised; it wouldn't stop. Like the famous cork leg, it went on and on and on, and the only way to hold it was by an anchor. So the inventor contrived a way to switch the wave motor power to vacancy and reduce the motion to a simple rocking on the waves. He proposes to make a third use of the power, namely, to furnish power for other machines when at the wharf. A trial of this will be made later, the boat having sufficiently demonstrated its capacity of wave propulsion.

The inventor of the boat is Paul Breitenstein, stage carpenter in the McDonough Theater, at Oakland. His nautical experience thus far has been mostly confined to one-sided boats which toss furiously on seas of canvas, while a loose-haired heroine balances gracefully in the bow and shrieks wildly for aid, which is the hero's cue to appear on a pier providentially interposed and lasso her into safety with a towrope. Nevertheless, the carpenter had so much confidence in his ability to handle real water problems that he expended $600 on his invention before it was finally floated in Oakland Creek. Now he believes he has a great thing, and says that nothing short of a good five-figured sum would buy the fruit of his brain.

## SUICIDE OF A BRAVE OLD SALT.

China's fleet is now a thing of the past, and many gallant men have perished with it, striving vainly to save their country's credit, with fate against them, and handicapped by corruption, treachery, and incompetence on shore. Chief among those who have died for their country is Admiral Ting Ju Chang, a gallant soldier and true gentleman. Betrayed by his countrymen, fighting against odds, almost his last official act was to stipulate for the lives of his officers and men. His own he scorned to save, well knowing that his ungrateful country would prove less merciful than his honorable foe. Bitter, indeed, must have been the reflections of the old wounded hero, in that midnight hour, as he drank the poisoned cup that was to give him rest.—"The Battle of the Yalu," by Commander McGiffin of the Chen Yuen, in the August Century.

# NEWS AROUND THE LAKES.

## CLEVELAND.

The Ship Owners' Dry Dock Co. have completed all the excavating, and most of the pile-driving, for the 100-foot extension of their north basin. It is hoped to have the dock entirely finished by September 1.

The Pennsylvania Co. has obtained permission from the Secretary of War to do the necessary outer harbor dredging to make a channel to their new lake front dock, which is to be occupied by the Cuddy-Mullen Co. The dredging will be done without expense to the government. The Hercules is to do the work.

"Stockly's Pier" is the title of an engraving of Cleveland's outer harbor in 1849, two years before the advent of Cleveland's first railroad. The drawing from which the engraving was made was a portion of the old stone east pier in the foreground, and shows as water a large tract now occupied by the railroad yards and the new Pennsylvania outer harbor docks. John C. Stockly brought the first load of coal to Cleveland. He brought it via the canal, and to introduce it he was obliged to employ a man with a horse and wagon to peddle it from house to house. Mr. Stockly became the pioneer lake coal shipper, and it was his enterprise that built Stockly's Pier, which extended from the foot of Water street 924 feet into the lake. Traces of it still remain, but it is surrounded by land now. At the time the drawing was made Stockly's pier was in the height of its glory, and the view shows two fine and fast passenger steamers from the old Buffalo-Cleveland Line, the Empire State and Queen City. They landed near the end of the pier, at which was a small covered station. Nearer the shore line a vessel can be seen loading with coal. The drawing has been for many years in the possession of "Father" H. M. Addison, of No. 150 Congress street, who has just had it engraved at a considerable cost to himself, in order to give circulation to this memory of early Cleveland. Mr. Addison is the founder of the Early Settlers' Association and has a wide reputation for benevolent work, particularly among the children. Mr. Addison is disposing of these pictures, which are prepared neatly for framing, at a nominal cost of 25 cents apiece. They can be ordered from him at his residence, but orders sent in to the MARINE RECORD will be promply turned over to him.

## CHICAGO.

*Special Correspondence to The Marine Record.*

Palmer, Cook & Calbick have chartered the W. H. Wolf for corn to Buffalo at 1¼c. Carr & Blair chartered the John F. Eddy for corn to Buffalo at 1¼c. J. G. Keith & Co. chartered the Parnell and Majestic for corn to Buffalo at 1¼c; the Sachem for oats to Port Huron at 1c; the George Sturges for corn to Port Huron at 1⅛c.

Harvey C. Beeson left Saturday evening for a two weeks' lake tour on business connected with his Lake Marine Directory. He went to Escanaba direct by the Goodrich Line, and will visit Buffalo, Cleveland and Detroit before returning to this city.

Captains complain that the fog whistle on the lightship at Poe's Reef is not, at all times, blowing when the atmosphere is thick from fog or smoke.

The steamer W. H. Wolf is unloading a cargo of black horse coal at the O. S. Richardson Fueling Co.'s dock at foot of North Market street.

The steamer City of Berlin is being unloaded at Peabody's coal dock by the W. S. Bogle Co 's new hoisting derricks and clam shell buckets.

The steamer Manitou had another blade of her wheel broken on Saturday soon after leaving Chicago. She turned back and went to South Chicago to the Chicago Ship Building Co.'s dry-dock and received a new blade to her wheel.

The steel steamer Victory made her trial trip Saturday afternoon and had her machinery thoroughly tested, which proved highly satisfactory. She ran into Chicago harbor at 6 p. m., and landed President Brown, Manager Babcock and other officials of the Chicago Ship Building Co, and a party of visitors and then went back to South Chicago. She will go to Escanaba to load a cargo of iron ore for South Chicago. Six thousand tons is spoken of as her first load.

The body of Cap H. J. Hatch, formerly master and owner of the schooner Kate Kelly, which went down off Racine in May last, was picked up off Kenosha last week, and having been identified by his son was brought to Chicago for burial. The funeral took place on Sunday at Oak Woods Cemetery under the direction of the Covenant Lodge of Free Masons, of which he was a member. The Ship Masters' Association of Chicago, of which he was vice-president, was represented by many of the deceased's old friends and brothers.

The Graham & Morton Transportation Co. will build next winter a new side-wheel steamer to carry 3,000 persons. She will be fitted and furnished with all the latest improvements and will be capable of making 20 miles an hour. She is to be ready for use on the Benton Harbor, St Joseph and Chicago route next summer, and will cost $250,000.

The steamer C. H. Starke, Capt. W. J. Crosby, arrived Monday night with cedar ties from Rogers City, Lake Huron. She had on an enormous deck load, which was nearly 23 feet above the deck. This is undoubtedly a record breaker.

The bodies of Messrs. Coates & Stillson, builders of the yacht Artist, who were drowned about three weeks ago by the capsizing of their yacht in a squall off South Haven, were picked up near Glenn's pier on Monday.

The stocks of grain in Chicago elevators last Saturday evening were 15,564,000 bushels of wheat, 1,837,000 bushels of corn, 666,000 bushels of oats, and 55,000 bushels of rye Total, 18,122 000 bushels of all kinds of grain, against 20,495 000 bushels a year ago For the same date the secretary of the Chicago board of Trade states the visible supply of grain in the United States and Canada as 38,517,000 bushels of wheat, 4,664,000 bushels of corn, 3,755,000 bushels of oats, 194,000 bushels of rye, and 28,000 bushels of barley.

Mr. W. H. Scott, for five years past chief clerk of the Lehigh Valley Transportation Co., has resigned to accept a similar position in the freight department of the Santa Fe Railroad, 212 Clark street, Chicago. Mr. W. J. Colley has been appointed chief clerk of the Lehigh Valley Transportation Co., Chicago.

## BUFFALO.

*Special Correspondence to The Marine Record.*

This port is just recovering from a month of unprecedented dullness, during which the river has been used chiefly by the line freight and passenger boats. The grain receipts have been rather small, but an improvement in this regard is looked for at once by the brokers, who also anticipate a lively movement of coal from now on, although the shippers say this hope is without foundation. Iron ore has been coming forward freely, and it is hoped this feature is permanent.

There is a good deal of interest shown here in the report of the army engineers recommending the extension of the breakwater to Stony Point. Lehigh Valley officials are quoted as having said in business conversation that as soon as such an improvement is completed they will at once open a new outlet into the outer harbor from the head of the ship canal.

The law, in the person of the harbor-master, stands by the Northern Steamship Co. in its struggle for dockage at the foot of Main street, and it is only a question of time when the excursion boats will, as a rule, have to seek other quarters for permanent docks. The general sentiment at present seems to favor a construction of a breakwater at The Front by the city, under which these boats could always find shelter. They would be easily accessible to the passengers as well, and would avoid the trouble and delays incident to entering the river.

The management of the Northern Line passenger steamers regret that there has been some feeling shown by owners and managers of some of the freight lines over the permission granted them by the Secretary of War to lock through the St. Mary's Falls canal in precedence of freight boats. Assistant General Manager Gordon states that there is no desire to abuse this privilege, and that precedence has several times been surrendered to freight boats which would otherwise have lost time in the river below the canal had they been delayed. These steamers are undoubtedly more of an advertisement for the lakes than any other one branch of trade, and an advertisement in directions which will attract much assistance in the way of general improvement of the waterways.

This season's receipts of grain up to August 1 are 37,664,586 bushels, according to custom house reports, nearly 7,000,000 bushels less than last year.

Messrs. Cobb & Wattles have issued an excellent chart of Buffalo harbor, which includes a directory of the marine houses, and for which there is a large demand.

The Salvation boat William Booth is in the harbor, having run over from Port Colborne last week. The marine branch of the Army is attracting much attention here. The boat, 72 feet long by 12 feet beam and 6 feet depth.

Mr. H. R. Watson, of the firm of Russell & Watson, has just returned from a cruise between Newport News and Providence on the Governor Ames, the largest schooner afloat.

The struggle over the fueling question is regarded as about settled. In fact, while the late action of the Lake Carriers' Association is generally approved, as leaving no loophole for possible violation of the agreement, some of the brokers state that Hedstrom, in offering fuel for $2, did so in all sincerity, as he has a quantity of good Pittsburg steam coal on his docks which, while all right now, will deteriorate if allowed to lie there too long, and that he is merely trying to realize on it. This firm, however, has been one of the most steadfast in the trial of strength which has just taken place and feel that the members of the agreement have lost nothing by refusing to touch it, even at this price.

Everything has at last been arranged for the government test of the Belleville boilers on the steamship North West. Three officers from the government engineering bureau will leave Buffalo on the North West on August 16th, with the necessary testing apparatus. The information that the bureau expresses itself as especially anxious to obtain is the actual weight of coal consumed in the boilers, and the water evaporated therefrom, together with the working of the boilers, the space required by them, and the usual repairs that have to be made to them.

Coal shipments for July were 299,660 tons; for the season, 829,829, 215,250 tons less than last year up to August 1.

The North West and North Land have been equipped with whistles that have a softer tone than the ones now used. The reason of this change is because they meet so many boats that wish to salute them, and the old whistles made too much noise. They are now fitted with two sets of whistles.

## TOLEDO.

*Special Correspondence to The Marine Record.*

One of James Rooney's scows sank in the straight channel last week and was run on to by the John Pridgeon. The scow was raised Monday and put in Gilmore's dry dock, both ends being smashed in.

Assistant Engineer W. T. Blunt has been investigating complaints of grounding near the Cherry street bridge. Better water may be expected there soon.

While coming into port last Friday the Massassoit took a sheer and collided with the schooner Sage. The damage to both was about $600.

The Iron Storage Elevator Co. will begin work soon on its $30,000 elevator on the river front.

Capt. Dachtler's new yacht Mischief was launched last Thursday afternoon from Keeley's wharf. She will sail in the 30-foot class, and was built on the lines of the Sultana. She is 40 feet long over all, and 23 feet long on the water line, by 10 feet beam and 4 feet depth. She has been pushed to get her into the Put-in-Bay regatta.

The C. H. & D. wharves will not receive cargoes from vessels until the water in the river is deepened.

## MILWAUKEE.

*Special Correspondence to The Marine Record.*

Ann Arbor ferry No. 1, now in ordinary, will again go into commission about September 1. The new awning on the No. 2 greatly improves the accommodations of the boat for the excursion business.

The steamer M. & M. has been getting a thorough recalking at Manitowoc. She was recently purchased by Capt. Frank Morris, and will sail from Kewaunee.

The new life-saving stations to be built at Bailey's Harbor and on Pilot Island will be ready for occupancy before the end of the present season. C. J. Olson, the contractor, is getting out the material at Menominee.

The water in Sturgeon Bay is reported very low.

Mr. Charles M. Strong will take charge next Saturday of the Milwaukee station of the weather bureau as chief observer. He has until recently had charge of the station at Columbus, O., and has a good record. The roster of the meteorological station after August 10, will be as follows: C. M. Strong, local forecast official; S. C. Emery, first assistant; L. C. Cover, Jules Sherier and F. J. Rupert, observers; Albert A. Hoelzel, messenger; Miss Julia Dorr, stenographer.

Capt. Phelps, who lives in this city, and who was for many years captain of the Tioga of the Erie line, referring to the Gilbert-Chemung race, says that under no circumstances can the Western liner Gilbert defeat the Chemung. Next to the Owego, it has been repeatedly proved that the Chemung is the fastest liner through the lakes. Only four boilers were in use at the time of the race on St. Clair River, which does away with the statement that the boats were going at full speed.

## DULUTH AND SUPERIOR.

*Special Correspondence to The Marine Record.*

Duluth receipts of coal for July, according to custom house statistics, were 91,136 tons of coal. Shipments were 718,000 bushels wheat, 245,707 barrels flour, 228,774 tons iron ore, and 24,294,370 feet lumber.

Superior received 258,349 tons of coal and shipped 35,480 tons of iron ore, 1,243,000 bushels of wheat, 306,960 barrels of flour, and 1,206,000 feet of lumber.

Ashland ore shipments for July were 456,653 tons, a little less than the June showing. Two Harbors shipments were 307,374 tons.

The flour handlers at the Northern Steamship dock have demanded and received an increase of pay from 15 to 20 cents per hour.

The owners of the Nyanza have libeled the cargo of the steamer, which was hard coal, consigned to the Pioneer Fuel Co., which refused the cargo on complaint that it had been damaged by water. The matter was later settled so that the cargo was allowed to be unloaded. The libel asks $2,000 for carrying charges and nine days' detention during the dispute.

The coal handlers struck Saturday for an increase in pay from 40 to 50 cents per hour. They returned to work Monday, but many think the trouble not yet over. The men on the Northwestern, St. Paul & Western, Youghiogheny and Lehigh coal docks and a few on the Allouez docks of the Northwestern, quit work Wednesday. The Duluth handlers have not yet joined the strikers. The men are orderly, but violence is apprehended among the freight-handlers. Things are at a standstill on the Superior docks.

The tug Zenith, of the Singer line, and the B. B. Inman, of the Inman line, had an exciting race last Wednesday night, but both claimed the victory. The race lasted over two hours. The owners of the two tugs are now trying to arrange a race in full sight of Duluth harbor for almost any distance from one to a hundred miles.

Last week 22,000,000 feet of lumber was sold to Chicago and lower lake ports, chiefly for this season's delivery. Over 2,500,000 feet has also been sold to go to the West Indies.

A new warehouse to cost $100,000 will be built on the

site now occupied by the Northern Fuel Co.'s No. 2 dock by the Northern Pacific Railway Co.

In the case of H. J. Redmeyer, libelant, against the schooner of H. N. Emilie, Eugene La Chance and Erick Erickson, intervenors, Judge Nelson has filed an order in the office of the federal court requiring the intervenor Erickson and one Gallagher to show cause on the first Tuesday in September, at Minneapolis, why the sale of the schooner to Gallagher, which took place in Duluth week before last for $50, should not be vacated and set aside. The United States marshal is also enjoined against selling or moving the schooner or any of its fittings. This is the schooner which the collector seized about a year ago on the suspicion that it was engaged in opium smuggling. She originally cost $2,000, and through litigation Redmeyer, the owner and builder, has about lost his all.

## THE FREIGHT SITUATION.

While the effect of the miners' strike is still noticeable in ore freights, the vessels have succeeded in obtaining 90 cents from the head of Lake Superior, and look for further advance as soon as the production again reaches its normal stage The figures given regarding the receipts of ore during July, will aggregate over 1,200,000 tons in the Cleveland customs district alone, indicate that the total of ore shipped by water will be between nine and ten million tons. The season is passing rapidly, and the demand for boats is still active.

Efforts to obtain 35 cents on coal to the head of the lakes have so far been frustrated, owing to several causes—the strike of the handlers, the amount covered by cheap contract, and by the number of owners tied up on contract ore, who must furnish their boats at the upper docks with a certain regularity which necessitates them securing cargoes of coal, when possible, in order to retain the proper schedule for their vessels. There have been vexatious delays at some of the unloading docks, however, and owners fight shy of coal when they find they can hurry back and get ore. They look for a large quantity of coal to go this fall, and feel that better prices can be obtained later on. The shippers, on the other hand, are not hurrying their coal to Lake Superior just now, on account of the uncertain labor conditions. One shipper received advices Wednesday from his Duluth dock, that while it seemed improbable that there would be any trouble on that dock, now was a good time to send as much of his coal to Lake Michigan as he could conveniently, and without advancing the rate.

A large amount of both hard and soft coal will probably go to Chicago as soon as the grain shipments begin in earnest, as shippers can then find boats who will be more disposed to go to Lake Michigan than at present. Renewed shipments of ore from Escanaba will also help, but Milwaukee receipts of coal are about up to the average.

Duluth is already preparing to ship large quantities of wheat. Charters have already been tendered by shippers at 3 cents, to be carried during the first week in September, and it is believed some charters have been closed at that figure. This, making all allowances for possible shortages, and for the trouble of cleaning out the boats, is as good as $1.05 on ore, and it seems that the dollar mark on that product must be reached soon. The visible supply of grain at Chicago is steadily growing, and chartering begins to be fairly lively there.

Lumber freights continue to grow in strength. The vessels ore obtaining $2 on lumber from the head of Lake Superior to Chicago, and expect to get that much to Lake Erie pretty soon Late large sales have given the market a bullish movement in excess of that in any other class of bulk lake freight, and the owners of the classes of vessels adapted to this trade feel correspondingly cheerful.

## CIVIL SERVICE EXAMINATION.

Applicants for the positions of marine letter carriers on Detroit River, will undergo a civil service examination at Detroit, Saturday, August 17. Applications will be received until 5 p. m., on Aug. 12. The duties of the position require courage and experience in the particular line demanded, and each applicant should be careful to make no claim of ability or experience beyond his power to demonstrate on trial, as no inexperienced person could fill it if selected for appointment. The service demanded is only for the season of navigation.

Mr. Harvey D. Goulder has gone on a fishing trip to Lake Superior.

## A LAUNCH AT CRAIG'S.

*Continued from Ninth Page.*

astern. She has four large boilers built by the Globe Iron Works Co., of Cleveland, which will develop 2,000 horse-power. She is fitted with all the latest improved equipment. There is a large amount of timber in her. The keelsons are three in number, each 15 inches thick, with a steel plate 4 feet by ¾ inch thick on the side of the keelsons. Three rows of stanchions have been placed under the deck beams. A steel chord at the head of the stanchions is connected with a steel chord on the keelsons by diagonal straps 44 by ⅝ inches. The outside planking is 5, and the ceiling 8 inches thick. The sides are also diagonally strapped from a double chord to under the turn of the bilge. The Shenango No. 2 will be hurried on to completion and will probably be an exact duplicate of the No. 1.

## BIG JOBS AT BUFFALO.

Work on the Union Liner Owego is well on toward completion at the Union Dry-dock, Buffalo. She is one of the largest insurance jobs that have been seen on the lakes. About 40 plates had to be taken off, and about 15 of these replaced with new material. A number of broken frames were also found. The little steam-barge C. W. Chamberlain got a new wheel. The steamer S. F. Hodge went into dock on Saturday night for repairs to an extensive bottom damage, received at Frying Pan Island.

At Mills' dry-dock the steamer H. E. Packer has been getting some bottom repairs Some jobs of calking have also been done at that dock.

## OTHER REPAIR WORK.

At Detroit the tug Torrent, which had her house scraped off in the St. Clair cut by the Yukon's tow line, has been entirely repaired and is again in commission, the work being done at John Oades' yard. At that yard the schooner Col. Ellsworth is receiving a thorough overhauling this week, and the steam-yacht Roberta is having her bottom cleaned and painted. The steamer Iron King had some work done to her machinery at the Detroit Dry-dock's engine works. The tug Kittie Haight has been getting repairs to her crankpin and cylinder.

The damage to the steamer Nyanza is so extensive as to keep her in dock four or five weeks. Capt. Dan McLeod has been representing the underwriters in a survey of her damages. She is in the West Superior dry-dock. The spar deck, half the main deck, and 60 feet of her starboard side must be replaced at a cost of $18,000.

The hole made in the side of the steamer Alva, near the foot of the Hay Lake Cut, is 16 feet square, and the work of patching is necessarily slow. A strong current setting around her bow has made the job particularly slow and expensive. She will proceed to South Chicago and will go into dry-dock there when unloaded. Her stern rests on the bottom and her bow in four fathoms of water. The barge 117, which inflicted the damage, was also badly hurt about the stem, her forward compartment being full of water. The Alva has been one of the most expensive boats for the underwriters this season. She was stranded at the time of the collision, but the force of the blow forced her off into deeper water where she settled.

The biggest repair job made necessary from standing will probably be on the steamer Kaliyuga, which fetched up on Bois Blanc Island, after just missing Poe's Reef. She went upon a rocky shore, and an expensive lightering job was necessary before she could be released.

The Mariposa is getting a new wheel at the Ship-Owners' Dry-dock.

The tug Niagara is being overhauled at Bay City.

The schooner Lady Jane is hauled up at the Co-Operative shipyard at Grand Haven for repairs.

The steamer Burlington was at the Riverside Engine Works Tuesday for some repairs to her machinery.

The Dahlke tug J. R. Worswick has been raised from the bottom opposite Cleveland, and is being thoroughly repaired by the Standard Contracting Co., a half interest in her being sold to D. P. Jones, superintendent of that company. Her machinery is getting a thorough overhauling and rebuild. About $500 worth of repairs are being made to the barge Alvina, which was damaged by fire last Thursday night in Cleveland.

The Clover Leaf liner John Pridgeon punched a hole in her bow at Toledo by striking a sunken scow, and is receiving repairs there.

The repair bill to the Arthur Orr will reach $8,000.

The schooner Agnes had a leak stopped at Detroit. The Tilden received the same attention at Port Huron.

At Sault Ste. Marie, James Pullar has been making a number of improvements at his shipyard, just below the Little Rapids. A new set of ways have been laid, and boats up to 140 feet in length can be pulled out and repaired. Mr. Pullar has had thirty years experience, and has built a number of boats. At this yard the tug W. B. Watson is receiving a thorough overhauling. She will be recalked and will get a new shaft. The tug Richard R. Endress got a new wheel there recently.

## FLOTSAM AND JETSAM.

Stage of water at the Sault at 8 a. m. Aug. 8, 14 feet 4 inches.

The last cut stone on the new Sault lock was laid on Monday of last week, without ceremony.

Dredge No. 6 sank in the river below the Erie avenue viaduct at Lorain Wednesday. She is being raised.

Various dates, including August 15 and September 1, are now announced for the opening of the Canadian Sault canal.

Claims of Cleveland, Toledo and Buffalo parties against the steamer Shrewsbury, aggregating $5,000, have been paid off.

It is quite probable that the government will blow up the wrecked schooner Republic, which is a menace to navigation off Lorain.

Angus Smith, the Milwaukee grain man, will retire from business within thirty days, having leased his four elevators to the Wisconsin Grain & Elevator Co. for five years.

Ashtabula's city council will act upon the suggestions of the Lake Carriers' Association, and will dredge the river at that port to a depth commensurate with the new twenty-foot channel.

The hull of the old schooner New York, of Oswego, which was wrecked 55 years ago near Point Traverse, has just been found in four fathoms of water, half a mile from shore. Nine men lost their lives in this wreck.

Capt. Visgar, of Alexandria Bay, brought suit against John D. Rockefeller, who had ordered a yacht made ready for him and then failed to appear for his ride. The captain demanded $25 for his trouble, which was paid in settlement of the suit.

Major M. B. Adams, engineer of the eleventh lighthouse district, has given notice to owners of buildings on the Saginaw Pier lighthouse reservation to remove them before January 21, 1896. This order includes the offices of the Michigan Log Towing Association.

The Alpena Pioneer is authority for the statement that the tug Sigisson, recently sold to Detroit parties, brought only $300, and that Capt. John Pringle, who took her to Detroit, charged the stranded steam-barge Atlantis $50 more than that for pulling her off the beach. This sounds pretty steep both ways.

Ashtabula is still the greatest ore receiving port in the world. The July receipts were 487,172 tons. For April the receipts were 1,905 tons; May, 338,859; June, 405,022, a total of 1,232,958 tons for this season. There were 395 arrivals and 398 clearances during the month. Coal shipments were 139,534 tons.

An insurance broker in Chicago writes: "We can not write insurance at any rate on vessels rated A2½. They now are practically shut out of the trade. It is difficult to cover vessels rated A2 and after September, even they probably will have to seek other channels of trade. This is rather hard on those who own such vessels, as some of those rated A2 are good boats."

During one day (24 hours) of last week, Thursday, thirty-seven trains delivered 19,878 gross tons of ore at the Two Harbors docks, and on the following day vessels cleared carrying 35,700 gross tons. These receipts and shipments are largely in excess of any previous records for a single day. Shipments of ore from Ashland for the season up to and including Saturday, July 20, aggregated 1,122,071, gross tons.

The shipments of lumber from Saginaw River during July were 12,219,000 feet against 24,000,000 for the same month last year. The lumber shipments for the season from the river were but 61,450,000 feet, being 13,000,000 feet less than for the same period last year. Only 650,000 pieces of lath and 270,000 shingles have been moved by water from the river so far this season. Lumber receipts at Bay City were 6,631,988 feet, of which 2,000,000 feet came from Canada.

# LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

**PRESIDENT.**

WILLIAM LIVINGSTONE, - - Detroit, Mich.

**SECRETARY.**

CHARLES H. KEEP, - - - Buffalo, N. Y.

**TREASURER.**

GEORGE P. MCKAY, - - Cleveland, O.

**COUNSEL.**

HARVEY D. GOULDER, - Cleveland, O.

**VICE PRESIDENTS.**

| | | | |
|---|---|---|---|
| J. C. GILCHRIST, | Cleveland. | THOS. CRANAGE, | Bay City. |
| A. A. PARKER, | Detroit. | W. S. BRAINARD, | Toledo. |
| S, D. CALDWELL, | Buffalo. | E. D. CARTER, | Erie. |
| WILEY M. EGAN, | Chicago. | J. C. RICKETSON, | Milwaukee. |
| F, N. LASALLE, | Duluth. | F. J. FIRTH, | Philadelphia. |

**EXECUTIVE AND FINANCE COMMITTEE.**

| | | | |
|---|---|---|---|
| H. M. Hanna,, | Cleveland, Ohio. | D. C. Whitney, | Detroit, Mich |
| H. H. Brown, | Cleveland, Ohio. | W. P. Henry, | Buffalo, N. Y. |
| James Corrigan, | Cleveland, Ohio. | J. J. H. Brown, | Buffa'o, N. Y. |
| H. A. Hawgood, | Cleveland, Ohio. | David Vance, | Milwaukee, Wis. |
| Thomas Wilson, | Cleveland, Ohio. | R. P. Fitzgerald, | Milwaukee, Wis. |
| M. A. Bradley, | Cleveland, Ohio. | John G. Keith, | Chicago, Ill. |
| J. C. Gilchrist, | Cleveland, Ohio. | J. S. Dunham, | Chicago, Iil. |
| E. M. Peck, | Detroit, Mich. | | |

**COMMITTEE ON AIDS TO NAVIGATION:**

| | | | |
|---|---|---|---|
| W. C. Richardson, | Cleveland. Ohio. | W. M. Egan, | Chicago, Ill. |
| George P. McKay, | Cleveland, Ohio. | Frank Owen, | Ogdensburg, N. Y. |
| H. G. Dalton, | Cleveland, Ohio. | A. W. Colton, | Toledo, Ohio. |
| B. L. Pennington, | Cleveland, Ohio. | James Davidson, | Bay City, Mich. |
| Thomas Wilson, | Cleveland, Ohio. | Alvin Neal, | Port Huron, Mich. |
| John W. Moore, | Cleveland, Ohio. | M. M. Drake, | Buffalo, N. Y. |
| W. S, Mack, | Cleveland, Ohio. | W. Bullard, | Buffalo, N. Y. |
| David C. Carter, | Detroit, Mich. | | |

**COMMITTEE ON LEGISLATION:**

| | | | |
|---|---|---|---|
| S. D. Caldwell, | Buffalo, N. Y. | James Corrigan, | Cleveland, Ohio. |
| James Ash, | Buffalo, N. Y. | Wm. Livingstone, | Detroit, Mich. |
| E. T Evans, | Buffalo, N. Y. | James Millen, | Detroit, Mich. |
| P. P. Miller, | Buffalo, N. Y, | Jesse Spaulding, | Chicago, Ill. |
| John Gordon, | Buffalo, N. Y. | C. A. Eddy, | Bay City, Mich. |
| W. Bullard, | Buffalo, N. Y. | Alex. McDougall, | Duluth, Minn. |
| Edward Smith, | Buffalo, N. Y. | F. J. Firth, | Philadelphia, Pa. |
| H. M. Hanna, | Cleveland, Ohio. | | |

## THE BUFFALO FUELING AGREEMENT.

Secretary Charles H Keep, upon the instructions of the finance committee of the Lake Carriers' Association, at a meeting held in Cleveland August 1, has issued the following circular :

BUFFALO, N. Y., August 3, 1895.

To the Signers of the Buffalo Fuel Agreement :

GENTLEMEN : When the members of the Lake Carriers' Association undertook at the annual meeting in Detroit, last January, to deal with the fueling abuse, there were many who doubted the result. A plan was put in operation, however, with which you are familiar, and the results obtained have been entirely satisfactory. Instead of the conditions which prevailed last season, the following is the present condition of affairs :

First—Except for the voluntary agreement of vessel owners not to take fuel from hard coal shippers, directly or indirectly, vessels chartered for coal at Buffalo have been and are now permitted to buy their fuel where they please.

Second—It has not been necessary for vessels seeking coal charters at Buffalo to fuel at the port of Buffalo, and many of them have taken cheaper fuel at other ports.

Third—The price of fuel at Buffalo this season has been fully 40 cents per ton lower than last season, with an improvement in quality.

Surely this is a most successful outcome of the struggle. In addition to these advantages, vessel owners have acquired new confidence in their ability to stand together, and to right their wrongs by united action.

The various fueling docks at Buffalo are charging at the present time $2.20 for lump coal and $2.00 for run of mine. This price is only five cents above the prevailing price at Ohio ports, and when it is remembered that in a great measure Pittsburg coal is furnished in Buffalo, and that this coal pays 25 cents more freight to Buffalo than to Ashtabula, it will be seen that the Buffalo price has been a reasonable one, affording less profit to the fuelers than the price at Ohio ports.

Within the past week a hard coal shipper at Buffalo (Hedstrom & Co.) has offered fuel to vessels at $2 per ton for lump coal. This is, in the judgment of those who are in best position to know the facts, a price at which fuel cannot be permanently offered at this port. It affords no profit to the fueler, but on the contrary involves a loss. Hedstrom & Co.'s offer was brought to the attention of a meeting of the Executive Committee of the Lake Carriers' Association held at Cleveland, Thursday, August 1, 1895, and it was the unanimous opinion of a large amount of tonnage represented at that meeting that it was simply a bait to induce vessel owners to break the agreement which they entered into at the beginning of the season, viz., not to buy fuel from a hard coal shipper under any circumstances. In the opinion of those present at the meeting it represented the last effort made by a single hard coal shipper at Buffalo to see whether he could not induce vessel owners to return to their former practice of fueling with shippers of hard coal.

In view of the results achieved by standing together in this matter, the Cleveland meeting adopted unanimously the following resolution :

Resolved, First—That under no circumstances should the members of this Association depart from the position taken at the beginning of the season, that they would not, directly or indirectly, fuel with hard coal shippers.

Second—That the Secretary of the Association be instructed to send a circular to all signers of the Buffalo fuel agreement, showing the present situation and advising them to stand by their contract made with one another at the opening of the season.

Respectfully yours,

C. H. KEEP,

Secretary Lake Carriers' Association.

## SAULT TRAFFIC FOR JULY.

Following is the official statement of the traffic through the St. Mary's Falls canal for the month of July, 1895, as compared with the corresponding period for the season of 1894 :

EAST BOUND.

| ITEM. | DESIGNATION. | July '94. | July '95. |
|---|---|---|---|
| Copper | Net tons | 14,469 | 17,812 |
| Corn | Bushels | 58,189 | 2,859 |
| Building stone | Net tons | 6,068 | 3,747 |
| Flour | Barrels | 788,790 | 858,582 |
| Iron ore | Net tons | 915,291 | 1,469,838 |
| Iron, pig | Net tons | 4,306 | 4,581 |
| Lumber | M. ft. b. m, | 113,152 | 133,243 |
| Silver ore | Net tons | ..... | 100 |
| Wheat | Bushels | 3,096,126 | 2,713,030 |
| Unclassified freig't | Net tons | 14,819 | 31,478 |
| Passengers | Number | 3,443 | 3,647 |

WEST BOUND.

| ITEM. | DESIGNATION. | July '94. | July 95. |
|---|---|---|---|
| Coal, anthracite | Net tons | 58,141 | 62 589 |
| " bituminous | Net tons | 227,061 | 432,873 |
| Flour | Barrels | ..... | ..... |
| Grain | Bushels | ..... | 10,400 |
| Manufactured iron | Net tons | 1,913 | 10,878 |
| Salt | Barrels | 15,874 | 37,165 |
| Unclassified freig't | Net tons | 29,876 | 41,608 |
| Passengers | Number | 3,806 | 4,256 |

| | |
|---|---|
| East bound freight, net tons | 1,923,835 |
| West bound freight, net tons | 553,752 |
| Total | 2,477,587 |

E. S. WHEELER,

Assistant Engineer and Gen'l Superintendent.

The report of the Sault Canal traffic for July shows that there was a large increase in every item over the corresponding month last season. There was also an increase in the items of registered tonnage and freight tonnage over that of any previous month in the history of the canal, of 18,076 and 186,796 tons respectively. There were no special lockages in connection with the new lock. Herewith is given the number of passages for the month, and other interesting figures bearing on the July traffic :

| | |
|---|---|
| Steamers | 1,911 |
| Sails | 860 |
| Rafts and unregistered craft | 67 |
| Total | 2,838 |
| Total registered tonnage | 2,655,712 |
| Total freight tonnage | 2 477 587 |
| Number of passengers | 7,903 |
| Number of lockages | 1,071 |

Total time lock was operated, 700 hours 33 minutes.

Aggregate time consumed by vessels in passing, 1,628 hours and 50 minutes.

COMPARISON WITH JULY, 1894.

| Year. | Passages. | Registered Tonnage. | Freight Tonnage. | Passengers. |
|---|---|---|---|---|
| 1895. | 2,838 | 2,655,712 | 2,477,587 | 7,903 |
| 1894. | 2,084 | 1,728,904 | 1,637,618 | 7,249 |
| Increase | 754 | 926 808 | 839,969 | 654 |

The canal postoffice handled 22,113 pieces of mail during the month, consisting of 19,430 letters; 1,053 postal cards; 1,502 newspapers, and 128 parcels. In addition to this 109 pieces were returned to the city post office as uncalled for and 230 were forwarded to new addresses. The business of the office exceeds that of any other month by 1,975 pieces of mail.

## HYDROGRAPHIC CHARTS

Of Lake Superior, Lake Huron, Georgian Bay and Detroit River, for sale at the office of THE MARINE RECORD, 144 Superior street, Cleveland, O. Price, 50 and 75 cents each.

## HYDRAULIC RIVETING.

It is not impossible to design so that hydraulic riveters could be used pretty well all over the hull, that the most of the framing could be bent cold to certain standard templates and fitted intercostal between longitudinals of girder type, that the plating could be lapped from below to above, from aft to forward, says Theodore Lucas in the American Shipbuilder. We can keep the form of the ship very nearly to square section without sacrificing any qualities whatsoever, and reduce the cost of building by that considerably; we can make drawings of details with plenty of figures in it on an extra large scale, body plans, plating strakes, center and side keelsons, web frames and double bottom frames, bulkheads, etc., etc,, without wasting a cent, if we only make these drawings at the start, that we may order our material from them with now nearly unknown preciseness and accuracy, make weight calculations and afterwards cost estimates, which will pay twice the cost of the drawings for the very first boat, not considering the chance of duplicating the boat with, perhaps, minor modifications in much shorter time than can be done now. Then, further, we can make on the foundation of such drawings piece-work arrangements with men whose experience is not as long as English mechanics had a chance to gain, but whose unusual alacrity in handling machine tools and adapting themselves to new and more effective methods will do more than make up for experience as long as we give them a solid foundation on which to base their estimates, and to get a thorough knowledge beforehand of the work that is to be executed. Then the enormous saving of time; that we can start and prepare work in many, many points at once, instead of having to wait for this or that to be erected for getting an idea what goes in. The mould loft gives us a good deal of information, but drawings—scale 1½ inches to the foot—give us the same information with equal correctness in much less time, and commercially much more handy and effective form.

Let us consider a ship of 325 feet long, 50 feet beam, and 28 feet deep. The hull would have 50 feet entrance, 35 feet run, and 240 feet parallel, middle body. The longitudinals might be part solid plate work, part lattice girder work, all with continuous angle irons on top and bottom; frames to be intercostal of four angle bars each, bent to a convenient radius for cold working and allowing continuous angle irons to pass in corners. The single bars have only one bend—90°, 60°—whatever we choose or need—and be cut off to any desired length. The number of these bars would run up to many thousands. An excellent occasion for piece work, also the longitudinal girders could be given out in piece work, riveted up on stationary riveters, thoroughly templated and punched. With a good layout, all these parts ought to go together without any difficulty.

## DETROIT RIVER POSTAL SERVICE.

The postal service on Detroit River is pronounced successful beyond all expectations. Postmaster Enright has canceled the charter of the Trio, which has returned to Port Clinton, O., and has engaged the Florence B., which is said to be better calculated to the service. He has also made recommendation to the Postmaster-General that a boat be especially built for the service, with a speed of 14 or 15 miles per hour and quick in turning. Whether his recommendations will meet the approval of the department is still a matter of conjecture, but it is possible that bids for her construction will be asked.

The postmaster's plan for delivering mail is to have pigeon holes alphabetically arranged, in which the mail could be distributed. Then, as soon as the approaching ship's name is learned, it is the work of only a minute to get the mail for her, and placed in water-tight pouches with cover screwed on, and with a piece of line attached to prevent miscarrying. When the pouch reaches the vessel's deck, the mail can be taken out at once and the mail for posting put in, when the pouch is to be thrown back. The plan followed at present is to send rowboats off from the tug with the mail.

Following are the statistics of the service for July : Mail received from main office, 4,396 pieces; mail received from boats, 2,627 pieces; specials received from main office, 14 pieces; specials received from boats, 8 pieces; telegrams received from main office, 9 pieces; telegrams received from boats, 25 pieces; total pieces handled, 7,079.

## AN ADVENTUROUS CAREER.

(ILLUSTRATED.)

The complete biography of the life of Capt. Thomas Williams, keeper of the life-saving station at Buffalo, would certainly be replete with interest. He chose early the life of a sailor, and served a long period on salt water before coming to the lakes. He has taken part in no fewer than 180 wrecks and rescues, including all the disasters occurring within reach from the Buffalo station.

Capt. Williams was born in Philadelphia in the autumn of 1840. His parents were Irish by birth, but had immigrated when very young, and he was the youngest of a large family; so he must be considered thoroughly an American. He ran away to sea when thirteen years old, and after shipping for several trips in the coasting trade, he went to the East Indies in the Elizabeth Kendall, making two trips. While lying in Calcutta he and other members of the crew enlisted in what was known as the "Rifle Brigade," composed mainly of men who had deserted their ships to march under Havelock against the Sepoys. Out of 700 brave fellows composing the brigade, all but 150 succumbed to the ravages of jungle fever, of which Capt. Williams had a dangerous attack. He returned to New York to recover his health, but later again shipped in the East India trade, and at one time shipped in a fine-looking Spanish brig, at Havana, but afterwards deserted on finding she was a slaver, swimming ashore in the night through water in which sharks abounded.

Capt. Williams first visited the lakes in 1858, when he made several trips. He returned to New York the following winter and enlisted in the navy, serving until after the war of the rebellion. After hostilities were ended he served for a short time in the revenue service, and finally, in 1871, found himself once more in Buffalo. He followed the lakes then for six seasons, and in 1877 signed as surfman in the Buffalo Life Saving Crew, as he had married and wished to remain on shore. He soon reached the position of No. 1, and when Capt. James M. Carroll resigned as keeper, in the spring of 1880, Capt. Williams was appointed to succeed him, and has ever since performed the onerous duties of his office with ability and faithfulness, winning high praises from the maritime public and his superiors in the service.

## NOT THE KIND WE WANT.

Rear-Admiral Meade, retired, gave an interesting talk on the merits of the cruiser Columbia, which has just beaten the transatlantic speed record for war vessels, to a representative of the New York Mail and Express a few days ago. As a citizen and a naval expert he is proud of her, but he does not think she is the very best type for the money.

"As to the Columbia's speed, he said, "I see that her chief engineer is confirmed in his belief that the triple screw is practically an impediment. She used only six boilers and two screws. If she had set the third screw at work, it would simply have dragged and would have lessened instead of having increased her speed. That is just the report I expected. She made her run on a maximum horse-power of 15,000, while her extreme capacity is 21,000,

"The Columbia's ordinary coal capacity is $1,700 tons, but for this voyage 325 tons extra were distributed in temporary bunkers, and even took up space belonging to the crew. I see that Capt. Sumner speaks of the inconvenience of the regular as well as of the temporary bunkers, and of the difficulty experienced in getting the coal to the furnaces. That was a defect which I pointed out in my paper read last spring.

"The armament of the Columbia is not what it ought to be. She was built as a compromise between the types of highest naval efficiency and the commerce destroyer. She has just escaped being either. Her speed attained in this last voyage shows that she is not in it with such liners as the St. Louis, Paris and New York, to say nothing of the Campania and Lucania. As a cruiser, the New York, with its heavy armament, could blow the Columbia out of the water. I consider the New York in every way a better fighting ship. She carries her coal better, and carries more of it. With all her power applied to her two screws she could keep up 19 knots an hour indefinitely. If Capt. Bob Evans had prepared her for a record passage, he could have knocked a whole day off the Columbia's time."

Admiral Meade says the Columbia is probably superior to any ship of her class in any other navy, but that she is not the kind that we want.

What we want, he says, is commerce destroyers. These must be as fast as the swiftest ocean steamers, and with every consideration paid to coal endurance.

"The policy which I approve," he said, "is to develop American ocean racers, with every arrangement for the speedy placing of their armaments, officer them from the regular navy, and drill their crews sufficiently to make them as effective comparatively as the volunteer soldier.

"Then at the first breath of hostilities we could sweep the seas of our enemy's commerce, and we would regain the ocean tonnage which we lost during the late civil war."

The Columbia's time referred to above was 6 days, 15 hours and 45 minutes from the Needles to Sandy Hook lightship, an average speed of 18.41 knots per hour.

## VALKYRIE AND DEFENDER.

Extreme as is the form of the new boat, her construction is no less remarkable and novel. Unlike Mr. Watson, Mr. Herreshoff has not been content with a presumed improvement of design and a conventional and tried construction, but has carried to an extreme a purely experimental construction. Starting with a lead keel of about 85 tons, a piece of metal 35 feet long, 5 feet

CAPT. THOMAS WILLIAMS.

6 inches deep, and 3 feet through at the center, the keel-plate is a casting of brass, in three sections, bolted together by flanges, the whole bolted with with bronze lag-screws to the lead keel. The stem and stern-post are also cast in brass and bolted to the brass keel-plate, while to flanges on the upper side of this plate are riveted the heels of the frames and the floor plates, all of steel. The outer plating is of manganese bronze about three-sixteenths of an inch thick up to a little above the water line, the top sides being plated with aluminum of one-quarter to three-sixteenths of an inch thick. With this all metal construction some of the straps of the composite method are dispensed with, but, like Valkyrie III, the interior of the hull is strengthened with diagonal and vertical braces from deck to bilge in a manner previously unknown in yacht-building. An alloy of aluminum, much stronger than the pure metal, has been used within for some of the deck beams, and for various straps and braces, and aluminum in one form or another has been liberally utilized. Should this construction prove amply strong, it will give great stability, through a large percentage of ballast and a very low center of gravity.

The sail area of Defender is as yet unknown; different sails and spars are shipped and tried from day to day, and only her owner and designer know just what the measurement will probably be. To the eye she has little or no more sail than Vigilant, but it is disposed in a different manner, more after the Watson plan, the mast well forward, a very large mainsail, and comparatively small head-sails. That this disposition of sails is very different from that of Vigilant in 1893 is partly disguised by the fact that Vigilant has since been altered, and presumably improved, by the shortening of her bowsprit and topmast, and the shipping of a longer main-boom. It now seems probable that even with the announced increase of sail on Defender she will measure less than Valkyrie III.

Three weeks ago, on the day that Defender was launched, Valkyrie III sailed her first race on the Clyde; on Saturday last, while Defender was sailing her first race off Sandy Hook, Valkyrie III was about starting from the Clyde for New York. The results of the four races sailed by Valkyrie III on the Clyde are, on the whole, satisfactory to her friends. While she showed a tenderness on one occasion that has been severely commented on by British writers, at the same time she was sailed in a very strong blow, with hard northwest squalls off the high ground, her sails and gear all stretching. Immediately afterward some ten tons of lead were shipped inside, apparently with only good results in light weather, while the result must be to greatly increase her stability. Taking the trials all through, she has shown a great increase of speed over Britannia and the newer and larger Ailsa.—Harpers' Weekly.

## NOTES.

THE Lehigh Coal and Navigation Co. has floated $1,000,000 4½ per cent. bonds at a premium. Half the amount will wipe out debts, and half will be spent on improvements.

A CITY of Mexico dispatch says that Jose J. Rivas, treasurer of Vera Cruz, has invented a new method of propelling ships by steam, and claims that a speed of 70 miles an hour can be obtained. Rivas is the inventor of a hydraulic pump.

ON Friday, July 12, the American steam yacht Tampa, owned by Chester W. Chapin, capsized in the Fay dry dock at Southampton, Eng., while on the blocks just before the water was let in. Several workmen were injured, and the yacht was completely wrecked.

CHARLES F. FOX, of Portland, Ore., is the latest wrecker to try his hand at raising the steamer Pewabic, lost in Thunder Bay in 1865. Mr. Fox's apparatus consists of a balloon-like arrangement which he will inflate with gas after the wreck is located and grappling irons attached.

SECRETARY HERBERT has appointed Commodore F. V. McNair president of the naval examining board, to succeed Commodore Brunce, assigned to the command of the North Atlantic station. Commodore McNair is now a member of the board, but is at present on temporary leave in Europe.

THE Prince of Wales, on Saturday, the 3d inst., unlocked and opened the gates of the Southampton dock of the London & Southwestern Railway Co., which is the largest dry-dock in the world. It is 750 feet long on the floor and 112½ feet wide and can, when necessary, be made 250 feet longer.

THE Navy Department has issued proposals for bids on the six light-draft gunboats illustrated and described in our last issue, numbered from 10 to 15. A speed of 12 knots is called for; with less than 11 vessels will be rejected. If they exceed 12 the builder will get no premium. The boats must be completed in 15 months.

THE Texas Channel and Dock Co., capital $1,000,000, has been incorporated at Arkansas Pass, Tex., to construct, own and operate wharves, docks, etc. W. H. Stedman and others are interested. A similar company with same capital has been chartered at Corpus Christi, Tex., by C. C. Heath and others.

IN 1885, France was the leading producer of aluminum. In 1886, Germany took the lead, and in 1889, England. Since 1890 Switzerland has outstripped the world. During 1894, however, only three countries were producers: France, 10 per cent.; Switzerland, 60 per cent.; the United States, 30 per cent. The price per pound has gone from $12 in 1885 to 35 cents in 1895.—Engineer.

THE iron material in the old Hammersmith bridge across the Thames, at London, Eng., was bought to use as false work at the new Forth bridge, Scotland. The iron, after sixty-two years of service, was as good as new. Many of the parts were inacessible, and had not been repainted since their erection. Pure white lead paint had preserved them.

# THE MARINE RECORD

ESTABLISHED 1878.

PUBLISHED EVERY THURSDAY, AT 144 SUPERIOR ST., (LEADER BUILDING), CLEVELAND, O.

IRVING B. SMITH, CAPT. JOHN SWAINSON, } . . . PROPRIETORS

BRANCH OFFICE:

CHICAGO, ILL., . . . . . 238 Lake Street.

THOMAS WILLIAMS, Associate Editor.

**SUBSCRIPTION.**

One copy, one year, postage paid, . . . . $2 00
One copy, one year, to foreign countries, . . $3 00
Invariably in advance.

**ADVERTISING.**

Rates given on application.

Entered at Cleveland Post Office as Second-class Mail Matter.

CLEVELAND, O., AUGUST 8, 1895.


### THE EAGLE SCREAMS.

The Detroit Dry Dock Co., is the lucky shipbuilding firm to figure in what is probably the most noteworthy shipbuilding contract on record for the lakes, in receiving an order from the Russian government for the construction of three monster car ferry steamers the size of the mammoth Ste. Marie, now plying in the Straits of Mackinaw. The most remarkable feature of this transaction is that in choosing the builders of these peculiar vessels, in which cost is a secondary consideration, the descendants of Peter the Great should pass by the hardy Norsemen, who are accustomed to fighting ice in its season as best they may, by the great shipyards of the Clyde, the Wear, Belfast and Liverpool, where the British ascribe to themselves the greatest perfection in the art of naval construction; by the great yards of the American coast where the most expensive of the government contracts are awarded, to place their gigantic contract with the firm whose product plies upon a stretch of water of which our ocean friends would fain all but deny the existence.

But the solution of the problem lies in the fact that the Russians want experience, not experiment. They have visited the lakes, and the boats of this especial pattern which the lakes have produced. They know just what can be done by the monster Ste. Marie, and her less pretentions, but proportionately no less efficient sister, the St. Ignace; and they know that boats built upon these patterns cannot but prove satisfactory in the work which which they will be called upon to perform. The winning of such a prize as the Russian contract, and winning it upon records alone, is something to make every American's bosom swell to bursting with true patriotic pride, and to make some of the transatlantic fellow craftsmen turn olive green with envy. This will probably wake some of the British shipping journals even more thoroughly than did the proposition of Mr. Cramp last summer, to the British government, suggesting that John Bull allow the Philadelphia yard to build him some war vessels that were in keeping with the times.

### A BOOM IN THE CONSTRUCTION LINE.

With the unprecedented revival in all trade after a period of depression, comes an entirely unexpected degree of activity in the lake shipyards, all of which are certain to be kept busy during the coming winter season. The greatest drawback the shipbuilders now have is the inability to secure material within what would be considered a reasonable time after it is ordered. Much of this material was purchased just before the late marked advances, and the mills have in many cases yielded to the temptation to work out orders on which they are making more money and to let the cheaper jobs wait. The amount of structural steel which is being turned out for bridges and buildings is something never before approached, and almost incomprehensible in volume, and even where shipbuilders come exactly in their turn, their orders are subject to delays in fulfillment which very naturally make them restive, especially when they have hundreds of skilled men in their yards, employed at tinkering about the yards in order that they may not wander elsewhere.

### PASSING IN NARROW CHANNELS.

As a result of a collision between the tug Torrent and schooner Yukon, the blame for which has uniformly been placed upon another steamer, which had just past the Yukon at a rate of speed which caused her to sheer, the finance committee of the Lake Carriers' Association instructed Secretary Keep to issue a circular asking owners and masters to steam at a moderate speed through that and other cuts. Any peremptory order to masters to reduce their speed to a certain number of miles per hour, say four, or even six, would, under certain conditions of wind and water, it would be impossible at times to obey, without getting into trouble, and if there are no other craft about, any speed which does not tend to injure the banks of the canal can do no harm. In cases where vessels are passing, either when meeting, or when bound in the same directions, full and explicit directions are given in the White law, which was passed last winter, and in case it is violated, anybody, so disposed, can look after its enforcement. It would seem that the law in such cases, ought to be more efficacious than a simple appeal, and at any rate, owners of vessels injured through an infraction of these rules have a remedy ready at hand.

Apropos of the fatal collision referred to, a contemporary made a rather amusing suggestion recently, which was all the more comical because of the dignified and condescending tone in which it was offered. The suggestion was that had a towing machine been in use upon the Sitka of Yukon, the schooner might have been drawn up, or the towline shortened, to use more nearly the exact words, in time to have avoided the collision. Towing machines are, of course, a valuable piece of machinery, and well worth the money invested in the labor they save in the manipulation of the tow line and the avoidance, by their use, of much wear and tear on the line; but it is too much to expect of a towing machine that it shall be turned loose at a moment's notice, to haul a schooner close up while the steamer continues at full speed. Such a display of power by the towing machine, when possible to exert it, could only have the effect of stopping, in a proportionate degree, the way of the steamer, and its effect in the Yukon case would havebeen *nil*, as the tow line was drawn taut when the accident occurred.

Ever since towing began on the lakes, the lines have gradually been lengthened from fifty fathoms to more than three times that length of line, it being found that, within a certain limit, the farther distant the schooner is from the swirl of the steamer's wheel, the better she will steer. Outside causes can always be found where the contrary appears to be the case; for instance, in the collision of the barge 117 with the steamer Alva. The latter was lying across the stream in such a way as to form a partial dam, and to create a swift current around her bow, in which current the bow was caught. Otherwise the barge, even in that crooked channel, could have steered around as easily as did her own steamer, the Peck

Now that the time for asking Congress for new appropriations for the rivers and harbors, and for other aids to navigation, it is not out of place to urge upon municipalities and individuals anew the desirability of taking better care of the improvements which have already been made. Government improvements which are made in connection with city work are usually pretty well looked after, especially where the efficiency of the one depends upon the state of the other; but a great deal of shortsightedness is displayed at many places along the lakes in the matter of indifference to the enforcement of the government's rules for the preservation of public works. It is said by the United States Engineers to be no uncommon thing for a tug man to tear a plank from a breakwater, merely to get a place to moor his boat. The first sea that comes along effects an entrance here, and tears away half a dozen more plank, and hundreds of dollars' worth of damage is soon done. It would not tend to increase the size of the appropriation to be given to a certain harbor on Lake Erie if Congressmen were to learn that when a pier caught fire there recently, it was allowed to burn until the flames spread so badly as to become a menace to surrounding property.

THE Sunbeam, about which there was so much anxiety on Lake Michigan, proves to have been all moonshine.

C. B. Lockwood, of Sandusky, George Newbury, of Detroit, and John Barth, of Cleveland, are the judges at the Put-in-Bay regatta this week.

## SHIP BUILDING AND REPAIRS.

### A FAMOUS CONTRACT.

Ever since the World's Fair, the talk of the construction of the trans-Siberian railway has had coupled with it the statement that the line would require a water link which would probably take the shape of ice-crushing ferry steamers, which should ply from one end to the other of Lake Baikal, a body of water as long as Lake Superior, and about as wide as Lake Erie, of a crescent shape, around which it was difficult, if not impossible to construct the line. Russian engineers have visited the lakes, and made close inspection of the construction and achievement of the steamers St. Ignace and Ste. Marie, now in service at the Straits of Mackinaw, as well as those plying in Detroit River and across Lake Michigan.

The Detroit Dry-dock Co. was recently requested by the Russian government, which is constructing the trans-Siberian, asking that a representative come immediately to St. Petersburg. Mr. Frank E. Kirby left at once, and was accompanied by Mr. Gilbert N. McMillen, secretary of the company, with whom it is a sort of wedding trip as well as a business journey. Before they had time to get across the Atlantic, however, the Detroit Dry-dock Co. received a cable intimating that they had been selected to do the work, and that details only would remain to be settled upon the arrival at St. Petersburg of the Detroit gentlemen.

As nearly as the information can be gained, there will be built three steamers, about the size of the Ste. Marie, with the possibility that two others will be constructed later, to meet the demand which will have grown by that time. They will practically be duplicates of the big Straits ferry, and will be built on the shores of Lake Baikal, which has no outlet navigable for a steamship of that size. The Russian timber which abounds in that vicinity is peculiarly well adapted for the purpose, and it is understood that vast quantities have already been cut and seasoned. The steel work and the engines, which are four in number for each boat, with the auxiliary machinery, will be made in this country and will be shipped to Siberia and placed in the hulls. The work will undoubtedly consume a year or two, and while the Russian Government will have its superintendents etc., the entire work will probably be under the general supervision of Mr. Kirby, whose skill contributed so greatly to the success of the boats whose work secured this contract for the Detroit Dry-dock Co.

The cost of these monster boats has been variously estimated at from $300,000 to $800,000. It is known, however, that the Russian government wants the boats to be of the best, in the whole and in every part of their equipment. It is stated on what seems to be good authority that the company is instructed to file with the Russian government statements of the actual cost of the work, to which a liberal percentage will be added for profit when the accounts are settled.

A letter from the Detroit Dry-dock Co., in answer to a query from the MARINE RECORD, states that nothing positive in regard to the contract can be learned before the last of this week.

### OTHER NEW WORK.

The contract for the construction of two more steel schooners for the Minnesota Iron Co., which, it was mentioned in last week's MARINE RECORD, contemplated such an addition to its fleet, was closed within 12 hours after the RECORD had gone to press. The two schooners will be built by the Chicago Ship Building Co., and will be fifty feet longer and four feet wider than the two schooners built last spring—the Malta and Marcia—but will otherwise greatly resemble them, both in rig and equipment. The boats will be 352 feet long between perpendiculars, by 44 feet beam and 26 feet depth.

The boat which the Union Dry-Dock Co., of Buffalo, contemplates constructing, is not yet entirely decided upon. If built, she will probably be either purchased by, or taken under charter by the Union Steamboat Co., which is very closely allied with the Erie railroad. Whether or not she will be built will be decided within a fortnight. The design will be much the same as that of the steamer Chili, built at the Cleveland Ship Building Co.'s yard for M. M. Drake and others, and running in the Lackawanna line, the dimensions being 342 feet over all, 324 feet keel, 47 feet beam, and 26½ feet depth, with between decks, ten large hatches, four gangways on

each side, and all of the latest improved propelling and auxiliary machinery.

One of the next contracts to be heard from will be that of the Graham & Morton Transportation Co., the directors of which have decided to build a handsome side-wheel steamer for their Benton Harbor, St. Joseph and Chiago route, to take the place of the propeller Chicora, which was lost on Lake Michigan, with all on board, last January. The fact that a sidewheel type has been chosen to succeed a propeller is especially worthy of careful note. The new boat must have a capacity of 3,000 passengers, will have compound engines, feathering paddles, and all the latest improvements in machinery and equipment. This contract will probably be awarded after receiving sealed proposals from various yards.

Another Lehigh Valley contract is among the probabilities. The raising of the Cayuga has practically been abandoned, the underwriters having been able to agree upon nothing as compensation for wrecking operations on the sunken hull. The proposition to get the flour out of her, made two weeks ago, will not be made again, it is thought, as even the underwriters believe that while not wet through the flour must be getting musty, and useless for many purposes. If the Cayuga is not raised, the Lehigh Company will need something to take her place. and while any one of a dozen boats could probably be secured under charter this season, yet something must be provided for next year's traffic, about which all sorts of good things are being predicted.

### THREE MORE LAUNCHES.

The big steel steamship Yale, building by the Cleveland Ship Building Co., for Robert R. Rhodes and others, including Moore, Barton & Co., of Cleveland, David Vance, of Milwaukee, and H. E. Myers, of New York, was successfully launched last Saturday afternoon, to the music of comic opera. The rain, which had been falling in torrents all day, let up for half an hour just at the right time, and the ceremonies were not in the least marred. The launch was witnessed by one of the largest crowds that ever assembled for the purpose at the Cleveland yard. The Yale has been turned bow down the river, and is rapidly receiving her machinery. Her boilers are now being put in, and it is expected that she will be in commission in about a fortnight. She will carry 6,000 net tons on 16 feet draft. Capt. John Coulter will sail her.

A large quantity of the material for the Wilson boat was ready before the Yale was launched, and the keel is now being laid, and construction will go on rapidly, the most being made of the fine weather while it continues. The company has also been doing a calking job this week on the schooner Malta, which left the Ship Owners' dry-dock last evening.

At the Globe Shipyard two more of the Steel Canalboat Co.'s barges were launched, the entire fleet now being afloat. The Alpha left for Lorain about 6 o'clock Wednesday evening, with barges Nos. 3 and 4 in tow. They will be loaded Thursday, and the fleet of six boats will leave for Buffalo Thursday evening, if the weather is favorable.

Work on the light-house steamer John G. Carlisle is progressing fairly, and the keel for the monster 342-foot steamship is to be laid at once. The material has already begun to arrive from the Otis Steel Co.'s plant. The Tyrone is receiving her rigging, and will get away from the yard about the middle of next week. The company has been engaged this week in repairing the bottom of the steamer Maruba, which is in the Cleveland dry-dock. The Maruba had ten damaged plates, some of which have to be replaced with new ones.

### THE CHICAGO YARDS.

The great steamer Zenith City is nearly completed, and the Victory has already set off for Escanaba for her maiden cargo of ore. This leaves no work in the yard of the Chicago Shipbuilding Co., on the Calumet, but Mr. John Corrigan's large steel barge, which is to tow behind the Aurora and has been given the euphonious name of Aurania. The two contracts which have just been awarded this company, however, for the construction of two more large steel schooners for the Minnesota Iron Co., mentioned elsewhere, will continue that yard as a busy scene of industry. The Aurania is almost all plated, but there is a good deal of interior riveting to do yet. The owners hope to have her in commission, however, within the first half of September. Capt. Andrew McKay, late of the Geo. W. Adams, will sail her.

At Miller Bros.' shipyard, in Chicago, the tug Commodore John Barry has been in dry-dock for a new shoe; the tug Dalton for some calking, and the tug Edward Watkins to have a leak stopped.

### AT CAPT. DAVIDSON'S YARD.

Car ferry No. 1 of the L. M. C. F. T. Co. was launched from Capt. Jas. Davidson's north slip, West Bay City, Tuesday at 4 p. m. A slight accident happened while launching. It is supposed that one of the timbers of standing ways projected further out than the others, and when she dropped off the ways that timber punched a hole through the four-inch planking of her bottom, and she filled up and quickly settled to the bottom. Of course the slip is not very deep and the vessel is not submerged. A diver went down Wednesday to make temporary repairs, and she will be towed to Chicago and docked there. The damage and inconvenience amount to very little and will, of course, be borne by the builder.

A heavy rain was falling, and there were very few spectators present. Among those present were S. M. Fischer, president, and son, and Mr. J. C. Aimes of the W. & M. railway; Mr. A. M. Kinsman, W. & M. R. R. engineer, all of Chicago; Mr. Charles Leed, of Bay City.

W. J. Wood, inspector, severed his connection with the Lake Michigan Car Ferry Co. on August 1st and was in Cleveland when the boat was launched.

The new barge was built by Capt. Davidson to the order of the Lake Michigan Car Ferry Transportation Co., and will be known as No. 1 of that line. No. 2 will be pushed to completion at once. Mr. S. M. Fischer is president, and Mr. J. M. Faithorn general manager of this company, and they bear the same relation to the Wisconsin & Michigan Railroad Co., with which line the boats connect. By a close traffic arrangement with the Soo line, the boats will carry the freight of that very important factor in the lake packet trade into Chicago, an entrance to which city has been eagerly but vainly sought by the Soo line for some time. The barges will ply between Peshtigo and South Chicago, a distance of 250 miles. They will carry cedar and telegraph poles for their up-lake freight at present, but will engage in the iron ore trade after the close of regular navigation. They will probably be towed for the rest of this season by the steamers White & Friant and Robert Holland, which will merely do tug service.

Barge No. 1 is 316 feet long over all, with 309 feet 2 inches keel, 44 feet beam, 18 feet deep, and 12 feet moulded depth. Her tonnage is 1,403. She will have four tracks on the main deck, so arranged that all the cars will leave the boat over one track, so that neither shifting of the barge, nor four tracks on the dock will be necessary. The capacity of these tracks is 27 cars of the largest, or 34-foot size, and 30 cars of the size ordinarily in use. She is equipped with the Manton steam towing machine, and the American ship windlasses and capstans.

There is a large pilot house and texas on the forecastle head, the texas containing fine quarters for the captain, furnished with a double bath; a separate spare room for the use of officials of the road, and a commodious dining-room and galley. The seven-foot vertical donkey boiler which furnishes steam is in the forecastle, as are the crew's quarters.

The hull of the barge is particularly strong. It is diagonally braced with steel chords. The sides are diagonally straped, with steel, 16x¾ inches, and have top chords 18x¾ inches, for the full length of the boat. There are three bulkheads from the floor to the main deck, the center bulkhead being diagonally strapped with steel, and having steel top and bottom chords. No. 2 will be an exact duplicate of No. 1.

Capt. Davidson has postponed indefinitely his project of starting a steel shipbuilding plant at West Bay City. He thinks that is hardly the place to do metal building, and will devote his energies, for another year, to working up a large quantity of timber that he has on hand. The launch of the first ferry boat leaves two large vessels on the stocks, one being the second ferry boat, which will be hurried to completion at once. The steamer W. A. Avery, which has been completely rebuilt, and is now known as the Phoenix, will be out shortly.

### WHEELER & CO.

The launch of the steamship Penobscot at the Wheeler yard last Thursday afternoon was an event in Bay City, as the vessel was the first built exclusively for Bay City parties. People from Detroit and Cleveland were present and the points of vantage around the launching place were thronged. The Penobscot is built on the channel system, and is 375½ feet over all in length, with 355 feet keel, 44½ feet moulded breadth and 26¼ feet moulded depth, the height between decks being 9 feet 3 inches. The water bottom is 52 inches in height, built on the cellular or compartment system, with solid intercostal floors, on alternate frames. Web frames are spaced every 16 feet and hold stanchions are on every beam. The steel plating varied from 20 to 25 pounds. There are 10 hatches 8x10 feet, spaced 24-foot centers.

The Penobscot is schooner rigged, with three pole spars. There are two deckhouses for the crew, lamps, etc. She is equipped with the Williamson steam steerer, American steam windlass and capstan, and Vulcan stockless anchors. For handling package freight she is fitted with a complete hoisting gear, with double hoists at each hatch and drawn by a 16x16 inch vertical engine. She is lighted throughout with electricity.

The main engine is of the triple expansion type, with cylinders 22x35½, 59 inches, and a common stroke of 44 inches, driving a Hodge wheel, 13 feet 3 inches in diameter and 16 feet 6 inches pitch. The independent condenser is 14x22x24 inches. The boilers are 13 feet 9 inches in diameter and 12 feet long, and are allowed 170 pounds pressure. Howden's hot draft is to be used, a 60-inch fan driven by a 7x7 inch vertical engine being placed in the engine room for supplying it.

The Penobscot will be commanded by Capt. Howard Shaw, who brought out the Selwyn Eddy. She is expected to carry 4,600 tons on 16 feet draft.

The Penobscot is thus minutely described because an exact duplicate (No. 115), is to be built for the Gratwick-Mitchell syndicate. The order was placed some weeks ago, but the names of the owners was not made generally public. The other boat which was ordered by the Eddy-Shaw syndicate, owners of the Penobscot, in the spring, and which it was given out at that time, was an exact duplicate of the Penobscot, proves to be 14 feet longer, and 4 inches deeper. She will have no between decks, as she is not designed for package freight, and will, consequently have neither gangways nor 'tween decks hoisting apparatus. It is known in the yard as No. 113. No. 114, ordered by D. C. Whitney, of Detroit, is to be a fast freighter, her lines being drawn even finer than those of the Centurion. The material is still in embryo at the Pittsburg mills. No. 110, the A. M. Murphy, a steel lumber steamer building for the Murphy Lumber Co., of Peshtigo, and No. 111, the Katahdin, for McCormick and others, of Bay City, are rapidly nearing completion. The keel has been laid on the big steel freighter ordered last March by L. C. Waldo and Dr. G. W. Roby, of Detroit, and work on her will be pushed with vigor from now on. The little steamer St. Joseph, which Mr. Wheeler recently acquired in part payment for the E. S. Tice, has been hauled out on the floating dry dock, and is receiving a thorough overhauling, and some work is also being done on Bearanger's steam-yacht Wahpiti. A new storehouse and tool house are being built, a small army of men are employed, and the yards present one of the busiest scenes on the chain of lakes. While Mr. Wheeler has had fairly good luck in obtaining material, yet he has been somewhat hindered by the delays from which other yards aresuffering so much annoyance.

### A LAUNCH AT CRAIG'S.

The launch of the car ferry steamer Shenango No. 1, announced for last Saturday at Craig's shipyard, in Toledo, had to be postponed until Monday, because of the stage of the water. On Monday, however, several thousand people witnessed the launch. The boat is 300 feet long by 52 feet beam, and will carry 28 ordinary cars, with their freight of eight to nine hundred tons, on 12 feet draft. She has three compound condensing engines, 23 and 46 by 36 inches, built by Hodge & Co., of Detroit, one being located in the bow, and operating a forward propeller, which will be used largely as an ice breaker. The other two engines operate twin screws

*Continued on Fifth Page.*

# IN THE ENGINE ROOM.

### A NEW STEAM WHISTLE.

A very common defect in the ordinary steam whistle is its frequent failure to emit a clear note at the very instant the steam is turned on, and this of course is an evil which calls for prompt removal. In many cases "condensation" interferes, and some seconds of escaping steam and water combined make the signal mentioned in the regulations quite unintelligible. A new double-note whistle, worked at the low pressure of 50 to 60 pounds of steam, now on view at the works of Messrs. Fawcett, Preston & Co., 17 York street, Liverpool, is a novelty in the matter of sound production, and the inventor claims that he completely overcomes the difficulty above mentioned by relieving the condensation quickly, while a clearer and more penetrating sound is produced by the simple plan of combining two notes.

In connection with this subject, a correspondent suggests that in order to arrive at some approximate idea of the value of signals emitted from the differently constructed steam sounding instruments, outgoing and incoming steam vessels, when abreast of the Rock light should be compelled to sound the "prolonged blast" prescribed by the Board of Trade regulations. The result of this experiment, says our correspondent, would cost simply nothing more than a little effort on the part of the navigating officer, and the effect would determine whether certain kinds of whistles used at present were capable of being heard at a respectable distance. The arrangement might apply to fogs, without danger to navigation, and would, perhaps, assist to solve the problem in dispute of fixing the position from which a sound emanates.—Liverpool Journal of Commerce.

### CLEAN MACHINE SHOPS.

The desirability of cleanness in an engineering workshop, of picking up every chip, and of sweeping in every nook and corner, has been so much talked about within the past few years that scarcely anyone possessing an ordinary shop is without a twinge of conscience every time he sees a little dirt heap. Practically, however, the exact degree of cleanness which is the most economical is a subject which might be profitably discussed. In a dark shop it is best of course to have the windows as clean as soap and water will make them, but where rough work is going on there would seem to be little use in trying to imitate some of the shops where only the finest work is done. If it is a question of making fine tools, gauges and nice work generally, cleanness is certainly desirable, but when it is repair work on big engines and the like, it is not likely that the shop owner can effect any increase in his income by attempting to have everything "spick and span." In one of the best known shops, where litter is never allowed to accumulate, it is quite interesting to study the conditions of the different departments. On one of the upper floors, where the work to be done is delicate, and where the light is, of necessity, very good, everything is as neat and clean as one could wish, but in those departments where the heavier and coarser work is carried on, there is no attempt to approach any such neatness. Every department has its own standard, and that standard is adjusted to the requirements of the work. The degree of cleanness and neatness then is to be determined by the money basis. That degree which will pay is the degree which a shop ought to support.—Cassier's Magazine.

### FOG SIGNAL EXPERIMENTS.

Mariners differ so widely in capacity that rules which would be very useful to one might be misleading to another, says Maj. Wm. B. Livermore, Corps of Engineers, U. S. A., in his report upon fog signal experiments. No definite instructions can be prepared that will insure against accidents. Even the best of seamen are often harrassed by cares and duties that divert their attention for the moment, and in case of disaster the most conflicting accounts have been given of the alterations of the audibility of fog signals. The noises upon the ship, the noise of the wind and waves, and the condition of the nerves, all effect the audibility of fog signals to a degree that can best be appreciated by studying the evidence. It is impossible to navigate in bad weather without more or less risk. Mariners should study the principles that effect the audibility of fog signals, just as they study the art of navigation, and should notice the wind and temperature whenever they hear fog signals. They should only depend upon hearing them at short range, unless the wind and weather favor the sound, but if they do hear them at long range they should make what use they can of them. They should remember that it does not require a very heavy wind to drive back the sound; that a southerly wind generally drives back the sound more than a northerly or an easterly one; that about the time of a change in the wind the sound is not generally heard as far as usual; that when the upper and lower currents of air run in different directions, or when the upper sails fill and the lower sails flap, or conversely, the signal is not to be depended upon; that a very heavy wind tends to break up all sound; that if a vessel is traveling with the wind the signal will probably be heard better than if it were traveling against it; that behind a hill or an island the signal may be heard better at a distance than nearer the obstacle; they should bear in mind that it is hard to locate a feeble sound, and even a strong one may appear to come from the direction if it is obstructed by objects near it, even by objects not directly in the straight line between the observer and the signal; the neighboring cliffs and sails sometimes reflect the sound; that the sound may be cut off entirely by passing vessels; that to estimate the direction of the sound the head should be turned rapidly from side to side, so that the sound should reach the ears alternately.

### AMERICAN STEAM VESSELS.

A very valuable book, with the above title has been received recently from Messrs. Smith & Stanton, the publishers, 129 Broad street, New York, the proprietors of Seaboard, a well-known authority in all marine affairs. The volume was compiled and illustrated by Mr. Samuel Ward Stanton. It is, without doubt, the most complete epitome of marine architecture ever issued from the press, and is a work of art well worth preserving. There are nearly 300 large illustrations, reproductions of accurate pen drawings, besides a large number of smaller pictures, together with a brief description of each of the different varieties of ocean, lake and river vessels, illustrated—from the first successful steamboat, Robert Fulton's Clermont, built at New York in 1807, to the transatlantic passenger steamship St. Louis, built at Philadelphia in 1894-5. The descriptive pages are exquisitely executed, each containing one or more small illustrations and handsome borders in quaint nautical designs, beautifully printed in colors.

The majority of the full-page drawings that appear in this work were exhibited at the World's Columbian Exposition in Chicago, 1893, and their delineator, Mr. Samuel Ward Stanton, was awarded a medal and diploma. The diploma reads:

"A very finely executed and interesting collection of drawings, which show with great skill and clearness various types of warships, mercantile ocean steamers, lake and river steamers, and yachts. They are of general interest, and show artistic merit and historical technical value."

The book is invaluable as a means of reference, and as showing the advancement of shipbuilding in the United States. It is admirably arranged for the convenience of those seeking information from its pages, and is printed in the highest style of the decorative and typographic art.

Among the lake vessels illustrated in this book are the Atlantic, Badger State, Chicago, Chicora, Christopher Columbus, City of Alpena, City of Chicago, City of Cleveland, City of Detroit, City of Toledo, Codorus, Empire, Empire State, Excelsior, Frank E. Kirby, Greyhound, India, Indiana (1841), Indiana (1890), Ironsides, Livingstone, Manitou, Maryland, Matoa, Merchant, Merida, Michigan, Milwaukee, Mississippi, North Star, North West, Northwest, Owego, Peerless, Petoskey, Pleasure, Princeton, Saranac, Saxon, Sheboygan, Soo City, State of Ohio, St. Ignace, Susquehanna, Thomas Cranage, Thomas Jefferson, Virginia, W. H. Gilcher, Walk-in-the-water, Western Metropolis, Western World.

### AN "ENGINEER" CHANGE.

Mr. Egbert P. Watson has purchased all the rights, title and interest of the Watson-Warren Co. in the Engineer, New York, and this very valuable publication, which is an authority on all matters in its line, is now published by Egbert P. Watson & Son. The Engineer is published every two weeks.

### BACKING CHARTS.

There have come to the office of THE MARINE RECORD a number of requests for "backed" pilot charts of the Hydrographic Office issue. The Hydrographic Office does not issue backed charts, but attention is called by Commander Sigsbee to the following directions for thus preserving charts, which were published with the North Atlantic Pilot Chart for December, 1893:

To make the paste.—Mix flour and cold water in such proportions that the mixture shall be of the consistency of cream after the flour has been completely macerated. When the mixture is in this condition, apply heat and boil. Stir thoroughly while boiling and continue the cooking until the mixture becomes thick and clear. Then remove from the fire and strain through thin muslin, after which add boiling water and make the paste thin enough to be applied with a brush.

To back the chart.—Use a good quality of cotton or linen cloth, which should be cut four inches wider than the chart each way so as to make a two-inch border all around the chart. Tack or paste the cloth down along its edges and stretch it very gently until flat and smooth. Lay the chart upon a table or flat surface, face down, and cover the back evenly with paste in a coat equal in thickness to a thick coat of paint. Fit the chart to the cloth and smooth it out by rubbing over its face with a dry cloth, pressing from the middle outwards, to avoid distortion. Next lay a large piece of wrapping paper upon the chart and press it down firmly with even strokes so as to make the chart adhere to the muslin closely and evenly throughout. When the chart is dry trim off the surplus muslin.

If these directions are followed closely the chart will lie flat after it has been backed. If the cloth is stretched too much, the backed chart will curl up.

### TRADE NOTES.

The August issue of the Calendar Blotter of the Joe Dixon Crucible Co., of Jersey City, is another of the always unique ads of that company.

The large new steel steamer Penobscot, launched at Wheeler's yard last week, is equipped with one of the excellent deck hoists manufactured by the Marine Iron Co., of Bay City.

The Clayton Air Compressor Works, New York, have followed up recent magazine articles upon the increasing use of compressed air with a handsomely illustrated catalogue of their various appliances, which includes a careful treatise on the use of compressed air recently published in the Engineering Magazine.

An error in a note reprinted two weeks ago made the RECORD say that four of the steam towing machines of the American Ship Windlass Co., were in use on the lakes. The number should have been eight and there is a prospect that others will be ordered soon. Recent patents have been issued which cover modifications of this machine.

The Roberts Safety Water Tube Boiler Co. has just taken an order for two boilers nearly as large as those for the Unique, from the Centennial Transportation Co., which has used two smaller Roberts boilers for seven years on the steamer George B. Sandt. The latter boat was recently sold to the Spanish government for use in Cuba. The last order was placed without competition being asked for.

An extraordinary thing to boast of is the statement that six of the crew of the new Defender yacht "can show records of having been in from two to four wrecks." It is hardly likely that Capt. Haff gave out this information himself, but if any disaster should overtake the Defender he would have no difficulty in finding a Jonah from that lot. Newspaper men who write such stuff ought to learn a little more about sailors' superstitions.

The American Ship Windlass Co., of Providence, R. I., have just shipped a windlass for the large steamship building by the William Cramp & Sons Ship and Engine Building Co. for William P. Clyde & Co. This windlass embraces all the latest improvements recently brought out by the American Ship Windlass Co. It has the crank shaft down close to the bed plate of the windlass, which greatly reduces the vibration, the wear and tear of the windlass, reduces the friction and noise in running, and makes it of course a more powerful windlass on account of the reduction of the friction, and also makes it more durable and less liable to come to repairs.

WILLIAM L. BROWN, President.
WALTER F. COBB, Vice President and Treasurer.
W. I. BABCOCK, Manager.
O. R. SINCLAIR, Secretary and Asst. Treas.

# Chicago Ship Building Co.

**STEEL SHIPBUILDERS and DRY DOCK PROPRIETORS,**

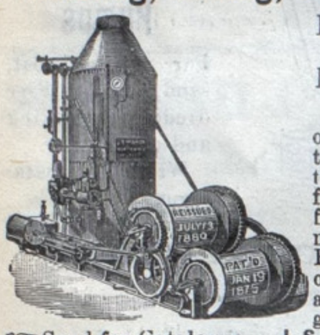
DRY DOCK AND YARDS: 101st Street and Calumet River.

LONG DISTANCE TELEPHONES: SHIP YARD & DRY DOCK OFFICE, "SOUTH CHICAGO 40." CHICAGO OFFICE, 1013 ROOKERY, "MAIN 3447."

Station S, CHICAGO, ILL.

---

**Hoisting, Mining, Bridge Erecting,**



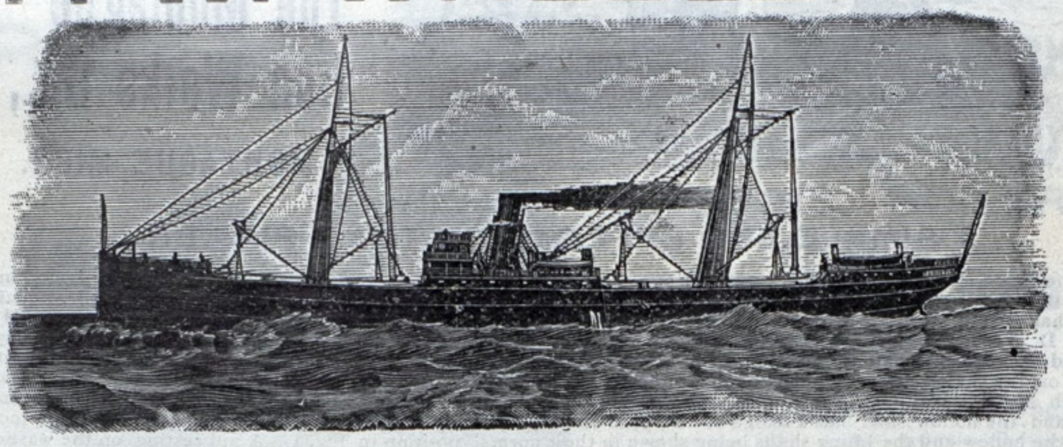
**Dock Build'g, Pile Driving, Coal Hoisting and Quarry Engines**

of any power, sugar cane transferring engines, transferring machines for depositing cane from car to carrier, with my improved Patent Friction Drums, with or without Boilers. Any amount of reference given. Established 1870.

Send for Catalogue. J. S. MUNDY, Newark, N. J.
741 Market St., Philadelphia, Pa.
22 Light St., Baltimore, Md.
117 Water St., Pittsburgh, Pa.
249 South Jefferson St., Chicago, Ill.
715 North Second St., St. Louis, Mo.
39 Magazine St., New Orleans, La.
34 Fremont St., San Francisco, Cal.
85 Front St., Portland, Oregon.
Fourth & Wakouta Sts., St. Paul, Minn.
218 Congress St., Boston, Mass.

---

# F. W. WHEELER & COMPANY.,



BUILDERS OF ALL KINDS OF

IRON, STEEL AND WOODEN SHIPS,

**FOR LAKE OR OCEAN SERVICE.**

West Bay City, Mich.

F. W. WHEELER, Prest. E. T. CARRINGTON, V.-Prest
C. W. STIVER, Secretary & Treasurer.

---

# FRONTIER IRON WORKS,

MARINE ENGINES,

DETROIT, MICH.

---

INCORPORATED 1794.

# Insurance Company of North America.

**CAPITAL, Paid up in Cash, - - - $3,000,000.00**
**ASSETS, - - - - - - 9,562,599.92**

CHARLES PLATT, President. WILLIAM A. PLATT, Vice-President.
EUGENE L. ELLISON, 2nd Vice-President. GREVILLE E. FRYER, Sec'y & Treas.
JOHN H. ATWOOD, Assistant Secretary.

## Lake Marine Department.

GEORGE L. McCURDY, Manager,
CHICAGO, ILLS.

---

**MARINE AND INLAND INSURANCE.**

# ATLANTIC MUTUAL INSURANCE COMPANY,

(ORGANIZED 1842.) Office, 51 Wall Street, NEW YORK.

**Insures against Marine and Inland Transportation Risks and issue Policies making Loss Payable in England.**

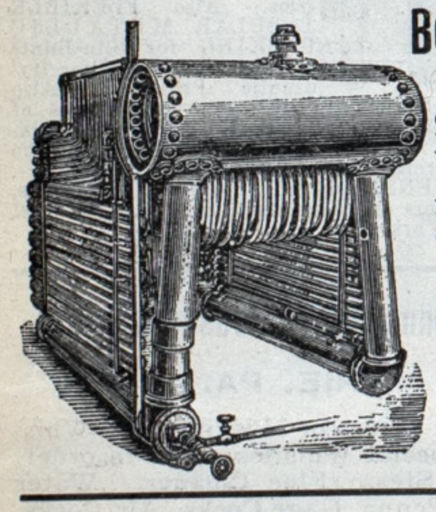
**Assets over $10,000,000 for the Security of its Policies.**

The profits of the Company revert to the assured, and are divided annually upon the premiums terminated during the year; thereby reducing the cost of insurance. For such dividends, certificates are issued bearing interest until ordered to be redeemed, in accordance with the charter.

J. D. JONES, Prest. W. H. H. MOORE, Vice-Prest. A. A. RAVEN, 2nd Vice-Prest. J. H. CHAPMAN, Secy.

---

## Boyer's Patent Sectional Water Tube Boilers



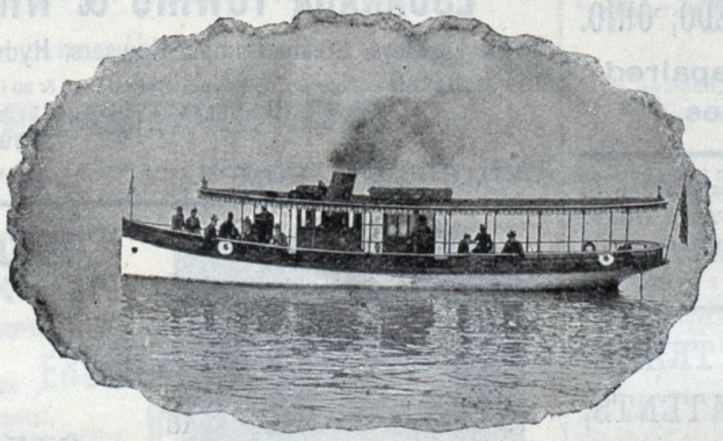
These rapid Steaming Boilers require less room, occupy less space in width, height and length; weigh less than any other.

Have short, perfect circulation, no dead ends, no joints in the fire, and any engineer can get at all parts of it.

The Steam Yacht "Rex," having 25 square feet grate surface and 1000 square feet heating surface, steamed 144 miles on 1000 lbs. of coal.

Address:

**L. BOYER'S SONS,**
**90 Wall St., New York City.**



# Marine Iron Works,

Clybourn & Southport Aves.,

CHICAGO.

BUILDERS OF

STEAM YACHTS,
MARINE ENGINES,
MARINE BOILERS.

Write for List of Boats for Sale.

---

# MARINE VALVE OIL FOR INTERNAL LUBRICATION.

# RENOWN ENGINE OIL FOR EXTERNAL LUBRICATION.

Marine Valve, Renown Engine, Eldorado Engine, Crank Case, Victor Signal, Dark Lubricating, Mineral Seal, Head Light, Arctic Cup Greases, and Lard Oils,

—CARRIED IN STOCK AT THE—

## Standard Oil Company's Marine Depot,

123 River Street, CLEVELAND, O.

TELEPHONE 77. MAIN OFFICE TELEPHONE 682.

ALSO FOR SALE BY STANDARD OIL CO.,

Chicago, Ill., No. 5 Wabash Ave.
Racine, Wis.
Milwaukee, Wis., Broadway & Mason.
Sheboygan, Wis.
Manitowoc, Wis.
Green Bay, Wis.
Marinette, Wis.
Oshkosh, Wis.
Duluth, Minn.
West Superior, Wis.
Hancock, Mich.
Marquette, Mich.
Buffalo, N. Y.
Sault Ste. Marie, Mich.
West Bay City, Mich., M. C. Ry. & 10th St.
Saginaw, Mich., Eighth & Sears Sts.
Detroit, Mich., 46 Jefferson.
Toledo, O., Summit & Monroe Sts.

Atlantic Refining Company, French & 16th Sts., Erie, Pa.
D. Robeson, Port Huron, Mich.
W. S. McKinnon, Ashtabula Harbor, O.
Hull & Rand, Huron, O.
Edward Brammall, Benton Harbor, Mich.
Baby & Dale, St. Clair, Mich.
N. C. Alten, Lorain, O.
A. F. Harrington, Conneaut Harbor, O.
A. H. McGonagil, South Chicago, Ill.
Marine Supply Co., Fairport, O.
F. Kranz, Sandusky, O.
The M. I. Wilcox Cordage & Supply Company, Toledo, O.

**MARINE ENGINEERING**

*(Also Stationary and Locomotive); Mechanics; Mechanical Drawing; Electricity; Architecture; Iron Work; Railroad,* Bridge and Municipal Engineering; Plumbing; Heating; Mining, Prospecting; English Branches. CANDIDATES PREPARED TO OBTAIN LICENSES. Courses begin with Arithmetic. Send for Free Circular, stating subject you wish to study.

TAUGHT BY MAIL THOROUGH PRACTICAL TRADE MARK REGISTERED.

**The International Correspondence Schools, Scranton, Pa.**

**Walter H. Oades' Shipyard,**

**MARINE RAILWAY AND SHEERS,**

**Ship Carpenters, Calkers & Joiners.**

Working on reasonable terms.

Yard: Foot of Dubois Street, DETROIT.

Telephone 1670, 3 rings.

ABRAM SMITH. ANGUS H. SMITH.

**ABRAM SMITH & SON,**

**SHIP-BUILDERS,**

ALGONAC, MICH.

Wooden Ships of any description built, rebuilt, or repaired.

Send for specifications, prices, etc.

Goods slips for laying up boats.

**A. J. MORSE & SON.**

DIVING APPARATUS

140 CONGRESS ST. BOSTON.

**A. GILMORE & SONS**

**TOLEDO DRY DOCK.**

Telephone No. 157, TOLEDO, OHIO.

**Vessels Docked and Repaired at Reasonable Rates.**


At Sandusky, O., the State Convention of Knights of Pythias will be held Aug. 6th to 12th, and excursion rates will be authorized on the Nickel Plate Road. 292–32


**PATENTS, CAVEATS, TRADE-MARKS, DESIGN PATENTS, COPYRIGHTS, Etc.**

**CORRESPONDENCE SOLICITED.**

John A. Saul, Atlantic Building,

Washington, D. C.

**ROBERT E. HILLS,**

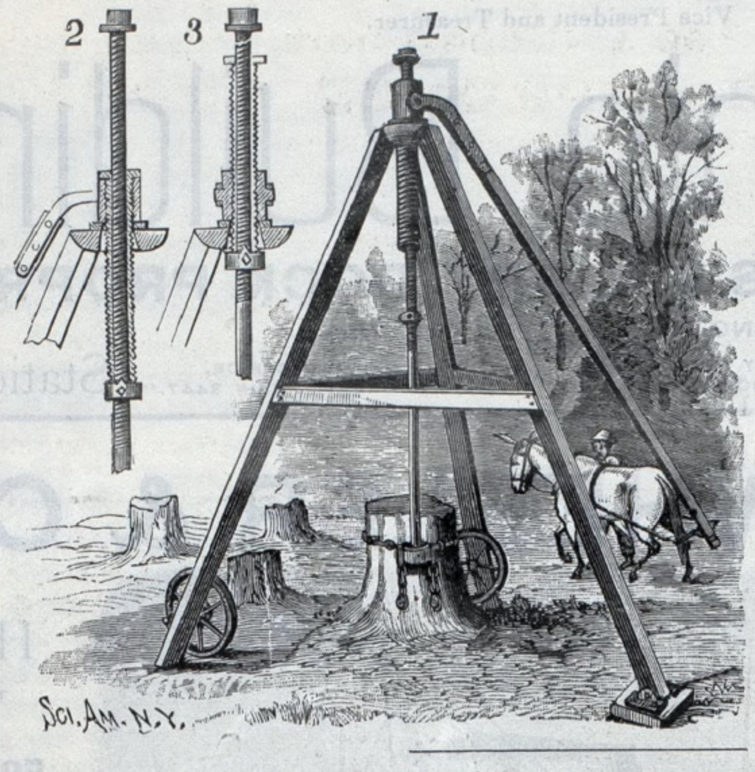
**STEAM FITTING AND HEATING**

Wrought Iron Pipe and Fittings, Engineers' Supplies; General Jobbing Work Done Promptly.

Also Proprietor of North Side Iron Works.

**57 & 59 North Wells St. CHICAGO, ILL.**

**Subscribe** now for THE MARINE RECORD. $1.00 will pay for six months, $2.00 for one year, including all supplements.




**WILSON'S PATENT STUMP PULLER,**

MANUFACTURED AND FOR SALE BY

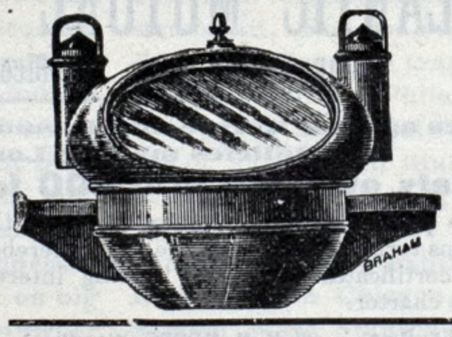
**The Montague Iron Works Co.,**

**MONTAGUE, MICH.**


## A SIMPLE AND EFFECTIVE STUMP PULLER.

The tripod frame of this stump puller has two of its legs provided with wheels, to facilitate moving it about, and to the third leg is swiveled a shoe, the head block at the top being preferably of metal, and having a conical opening, a half round washer resting on the block above the opening. The improvement has been patented by Mr. James D. Wilson, of Montague, Mich. Secured in any suitable way to the stump is a lifting shaft at whose upper end is a cap, the shaft having an exterior thread, preferably of two and a quarter inch pitch, and an adjustable clutch on the shaft, below the head block, is adapted for locking engagement with the lower end of a hollow shaft through which the lifting shaft passes. The interior of the hollow shaft has a thread engaging that of the lifting shaft, and the hollow shaft has a flange at its upper end and an exterior thread, preferably of four and a half inch pitch, the hollow and the lifting shafts being shown in their normal position in Fig. 1. A nut resting on the washer receives the exterior thread of the hollow shaft, the shape of the washer and of the head block permitting the lifting shaft to be somewhat inclined without becoming cramped. Arms projecting from the nut are secured to a lever or sweep to which a draught animal is attached, the lifting shaft moving up at a speed corresponding to the pitch of its screw thread, as the sweep is carried around, but when the clutch on the lifting shaft engages with the hollow shaft the latter is also carried up with the main shaft, at a correspondingly greater speed, owing to its coarser pitch, the stump then being raised four and one half inches at each revolution of the sweep. In Fig. 2 the lifting shaft is shown drawn up to a connection with the auxiliary shaft, and in Fig. 3 the two shafts are shown elevated together. As will be seen, the stump is first started and slowly drawn up by the main shaft, and is afterward raised more rapidly by the coarser thread on the auxiliary shaft.—*Scientific American.*

Will pull the largest stumps without digging or chopping. The price of all iron-work, including chains, is $125.00 delivered on car or boat, Montague, Muskegon Co., Mich., and we furnish a blue print from which to make the wood work. This machine has all of the advantages of the old screw power besides the advantage of the quick hoist for lifting the stump out of the hole, and will accomplish twenty-five per cent. more work than the ordinary stump machine. Main screw of steel 3½ inches in diameter, 16 feet long, auxiliary or quick hoist screw 5½ inches in diameter, 5 feet long. Chains 1 inch or 1⅛ inches in diameter by 8 feet long. Iron work for machine complete weighs 1,400 pounds. The timber required for frame is 10 by 12 inches Norway pine, or 8 by 12 inches hardwood, and tapered to 8 by 8 inches at the ends.


**FRANK MORRISON, COMPASS ADJUSTER**

AND MANUFACTURER OF

**NAUTICAL INSTRUMENTS.**

COMPASSES. BAROMETERS, PATENT LOGS, BINNACLES, STEAM GAUGES, MARINE GLASSES, ENGINE INDICATORS.

All Nautical Instruments Carefully Repaired.

Office with Upson, Walton & Co., 161 River St., Cleveland, O.

J. H. OWEN, Prest., Chicago. F. H. VAN CLEVE, Sec'y, Escanaba. Capt. GEO. BARTLEY, Supt., Escanaba

**ESCANABA TOWING & WRECKING CO., Escanaba, Mich.**

Tugs, Lighters, Steam Pumps, Hawsers, Hydraulic Jacks and Diving Appliances always ready.

**TUG MONARCH**—Engine Compound, Cylinder 16 & 30 in. diameter, 30 in. Stroke, Steam Pressure allowed, 125 lbs.

**TUG DELTA**—Cylinder 20 by 22, Steam Pressure allowed, 105 lbs.

**TUG OWEN**—Cylinder 20 by 20, Steam Pressure allowed, 104 lbs.

**CENTRIFUGAL PUMPS. SEVEN AND FOURTEEN INCH SUCTION.**

***TREGURTHA SAFETY WATER-TUBE BOILERS***

**Single, Compound and Triple Expansion Engines.**

**STEAM YACHTS AND LAUNCHES.**

New and Second-Hand Launches in Stock.

**MURRAY & TREGURTHA,**

West First Street, foot of F Street,

SOUTH BOSTON, MASS.

Send three 2c. stamps for Catalogue.

*Send for Descriptive Cicrular.*

**Nautical Watch Chain.**

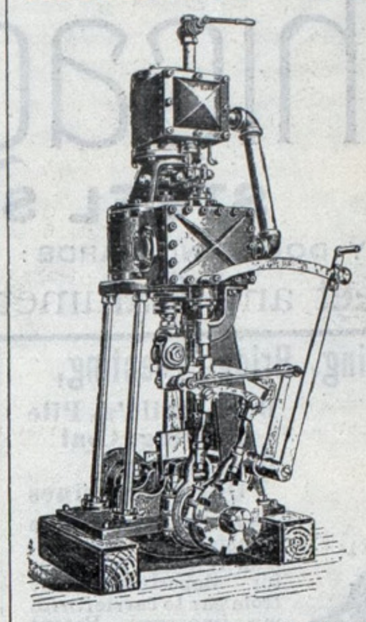
SOLID GOLD. SHIP-SHAPE IN EVERY DETAIL.

Sheaves work, snatch block opens out and seizings are passed correctly.

**MORGAN A. ROBERTSON,**

26 John Street, New York.

**MARINE ENGINES**



SINGLE AND COMPOUND.

5 TO 200 HORSE-POWER. These engines are high-class in workmanship and material and moderate in price.

Send for cuts, description and prices

**Centrifugal Pumps**

For raising coal, sand, &c. For dredging, wrecking and circulating.

Write for catalogue.

**MORRIS MACHINE WORKS,**

Baldwinsville, N. Y.

HENION & HUBBELL, Agents,

61–69 North Jefferson St., Chicago, Ill.

**Baker's Quadruple Grip Anchor**

PATENTED.

AGENTS WANTED.

**Watertown Brass & Mfg. Co.,**

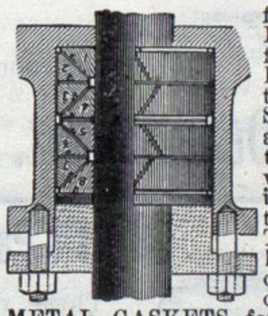
WATERTOWN, N. Y.

Send Stamp for Catalogue.

Mfrs. Yacht, Boat and Canoe Hardware
Special Work a Specialty.
Boat Rails, Stanchions, Etc.

MENTION THIS PAPER.

**Katzenstein Self-Acting Metal Packing**



for Piston Rods, Valve Stems, Etc., of every description, for Steam Engines, Pumps, Etc. Adopted and in use by the principal Iron Works, Steamship Companies, Mills and Engine Builders, Electric Light and Power Plants within the last twelve years in this and foreign Countries. Also FLEXIBLE TUBULAR METALLIC PACKING for Slip-Joints on Steam Pipes and for Hydraulic Pressure. Also METAL GASKETS for all sizes and shapes of flanges. Double-Acting Balanced Water-tight Bulkhead Doors for Steamers. Also Agents for the McColl-Cumming Patent Liquid Rudder Brake.

L. KATZENSTEIN & CO., General Machinists, Brass Finishers and Engineers' Supplies, 357 West Street, New York, N.Y.

**The Pennsylvania Brass Works,**

**ERIE, PA.**

Automatic Piston or Mocking Bird Whistles. Special Whistles made to order. Penna. Steam Flue Cleaner. Water Gages, Penna. Gage Cocks, Air Cocks, Oil Cups, Brass and Bronze Castings a Specialty.

**E. G. ASHLEY,**

**CHOICE FAMILY GROCERIES.**

ALSO ALL KINDS OF

**Fresh, Salt and Smoked Meats.**

Vessel orders attended to day and night. Goods delivered by Steam Yacht "Maggie D."

**36 & 38 Summit Street, TOLEDO, O**

**Linwood Park, Vermillion, O.**

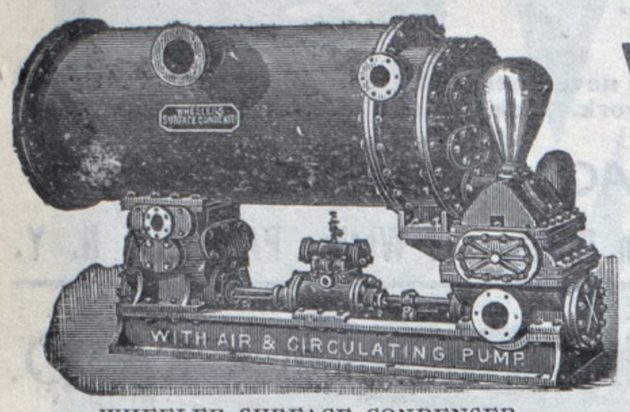
A delightful summer resort located on the south shore of Lake Erie. Excursion tickets via the Nickel Plate Road offered during the entire summer. 295–36

# Wheeler Condenser & Engineering Co.,

39 & 41 CORTLANDT STREET, NEW YORK.

## WHEELER'S IMPROVED SURFACE CONDENSERS

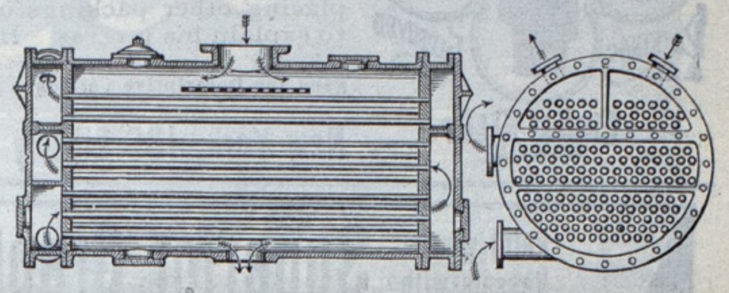
**Mounted upon Combined Air and Circulating Pumps.**




WHEELER SURFACE CONDENSER,
Mounted on Combined Air and Circulating Pumps.

Sole Proprietors and Manufacturers of the
WHEELER STANDARD SURFACE CONDENSER.
WHEELER ADMIRALTY SURFACE CONDENSER.
WHEELER LIGHT HALL SURFACE CONDENSER.
VOLZ PATENT COMBINED SURFACE CONDENSER AND FEED-WATER HEATER.
WHEELER FEED-WATER HEATER, AIR AND CIRCULATING PUMPS.
EDMISTON PATENT FEED WATER FILTER.

**Send for Pamphlet, "Machinery for Small Boats, etc."**



PATENT COMBINED SURFACE CONDENSER AND FEED-WATER HEATER.

---

## P. M. CHURCH & CO.

SAULT STE. MARIE, MICH.

SHIP CHANDLERY, HARDWARE, PAINTS, OILS, AND ALL CLASSES OF **VESSEL SUPPLIES.**

Coppersmith Shop in connection

Corner Portage and Ashmun Sts.

TELEPHONES, - {OFFICE NO. 7. RESIDENCE NO. 4

---

## Record Supplements - -

PHOTOGRAVURE AND PHOTOTYPE.

SIZE, 10 x 17 INCHES.

Whaleback Steamer Christopher Columbus,
Prominent Lake Marine Underwriters,
Steamer CITY of ALPENA,
STATE of OHIO—STATE of NEW YORK,
Steel Ship Builders,
Steamer ARTHUR ORR,
English-Built Steamer TURRETT,
Dry Dock Representatives,
Schooner JOHN FITZPATRICK.

Complete set of nine mailed to any address on receipt of 30c in stamps.

**SMITH & SWAINSON, Cleveland, O.**

---

# D. & C.

## The Detroit & Cleveland Steam Nav. Co.

Daily for Detroit, Bay City, Saginaw, Grand Rapids, and all Michigan points, at 10:00 P. M.

For Mackinac, Alpena, Petoskey, Soo, and all way ports, 4 trips per week.

For Put-in Bay, Lakeside, Kelley's Islands, Toledo, Sandusky, Etc., Daily at 8:30 A.M., from June 15th to September 10th.

Arrangements now made with societies, etc., for their annual outings. Te'ephone 576.

A. A SCHANTZ, G. P. A., DETROIT, MICH.
D. C. McINTYRE, G. F & D. P. A., CLEVELAND, O.
J. C. MENGENSDORF, C. P. A.

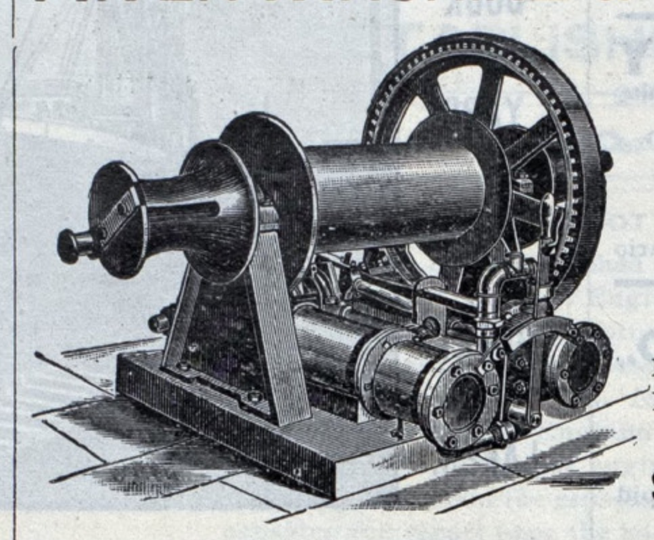
---

Reduced Rates are offered to Columbus by agents of the Nickel Plate Road for the Y. P. C. Union, Aug. 21st to 25th. 291–33

---

T. R. TEARE. M. THOMAS.

## RIVER MACHINE & BOILER WORKS



MARINE AND STATIONARY
ENGINES, BOILERS,
. . AND . .
DECK HOISTING ENGINES.

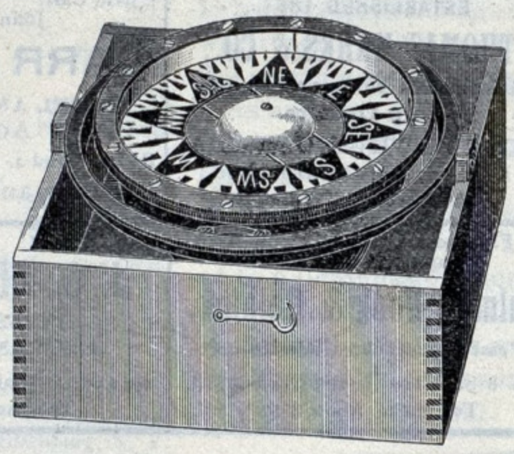
Starting, Stopping, Reversing and Lowering all done by working one Lever.

SOLE AGENTS FOR
St. John's Self Adjusting Cylinder Packing.

171 RIVER STREET, CLEVELAND, O.

---

## LIQUID (SPIRIT) COMPASSES



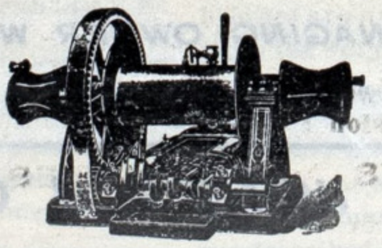
Of our make, in seven sizes, embody every known point of excellence possessed by those of other makers, and in addition have been improved in many important details.

We therefore positively assert that in general construction and thoroughly scientific action of the card, we offer the best liquid compass ever made in this or any country. For sale by ship chandlers generally.

**JOHN BLISS & CO.,**

128 FRONT STREET, NEW YORK.

---



## JACKSON & CHURCH,

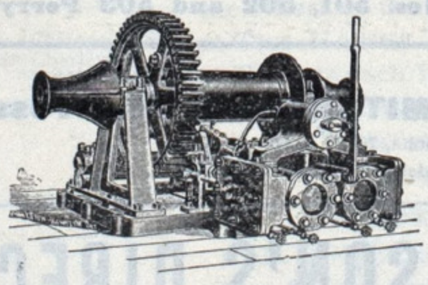
BUILDER OF DUPLEX HOISTING AND DECK ENGINES.

Plain Finished and Automatic **ENGINES,** From Heavy Patterns at Moderate Prices.

Vertical, Horizontal, Marine and Locomotive **BOILERS** Strictly First-Class and Highest Test.

SEND FOR CIRCULAR AND PRICES. **SAGINAW, MICH.**

---



## DECK AND DOCK HOISTS

Our Hoists will be found on the following boats: Tugs—Superior, Sumner, Sweepstakes, Winslow, J. K. Emmett, Acme, Mockingbird, Waldo Avery, Reliance, John Owen, Charlton, Howard, Duncan City, Chamberlain, Balize, Sampson, Westover, Gladiator, W. B. Castile, Home Rule, Robert Weideman, Boscobel and Peter Smith; Propellers—Metamora, Abercom, Penobscot, J. J. McWilliams, I. W. Stephenson, John W. Pauly; Barges—Jenness, Noquebay, Manta ee. Also in use by F. W. Wheeler & Co., W. B. City, Mich., Blood and Hart, Marine City, Mich., Michigan Salt Works, Marine City, Doty Bros., Pile Drivers, Toronto, Canada.

**MARINE IRON CO., - - Bay City, Mich.**

---

## PROPOSALS.

OFFICE OF LIGHT-HOUSE ENGINEER, 9th and 11th Districts, Detroit, Mich., August 1, 1895. Proposals will be received at this office until 3 o'clock p. m., of Monday, the 12th day of August, 1895, for furnishing twenty-two ten-inch steam fog whistles for eleven fog signal stations in the 9th and 11th Light-House Districts, delivered at the Light-House Depot, Detroit, Mich. Plans, specifications, forms of proposal and other information may be obtained on application to the undersigned. The right is reserved to reject any or all bids and to waive any defects. M. B. ADAMS, Major, Corps of Engineers, U. S. A., Light-House Engineer. 32

U. S. ENGINEER OFFICE, 34 West Congress St., Detroit, Mich., August 7, 1895. Sealed proposals for furnishing all Labor, Materials and Appliances for (a) Removing Shoals from West Approach, St. Mary's Falls Canal; (b) Removing Shoal from East Approach, St. Mary's Falls Canal; (c) Removing Shoals off Six Mile Point, Hay Lake, and (d) Removing Shoal 29, Section 4, Ship Channel, etc., will be received here until 2 p. m., September 6, 1895, and then publicly opened. All information furnished on application. O. M. POE, Col., Engineers. 32–35

---

## Cleveland & Buffalo Transit Company.

**$2.50 CLEVELAND TO BUFFALO.**

VIA "C. & B. LINE."

Magnificent side-wheel steel steamers,

**"State of Ohio" and "State of New York"**

DAILY TIME TABLE.

SUNDAY INCLUDED.

| | | | |
|---|---|---|---|
| Lv. Cleveland, | 6 00 p. m. | Lv. Buffalo, | 6:30 p m. |
| Ar. Buffalo, | 7:30 a m. | Ar. Cleveland, | 7:30 a. m. |

CENTRAL STANDARD TIME.

Take the "C & B. Line" steamers and enjoy a refreshing night's rest when enroute to **Buffalo, Niagara Falls, Toronto, New York, Boston, Albany, 1000 Islands**, or any Eastern or Canadian point.

**Cheap Excursions Weekly to Niagara Falls.**

Send 4 cents postage for tourist pamphlet.

W. F. HERMAN, Gen'l Pass. Agent. T. F. NEWMAN, Gen'l Manager.

CLEVELAND, O.

Now under construction for this Company the largest side-wheel steamer on the Great Lakes, unsurpassed for speed and elegance, will be ready to go into commission April, 1896.

---

For the Knights of Maccabees Convention at Cleveland, O., Aug. 13th to 15th, the Nickel Plate Road offers excursion tickets. 293–32

---

## FRANKLIN HOUSE

Corner Bates and Larned sts., only a block from Woodward and Jefferson aves.

**DETROIT, MICH.**

The house has been **thoroughly renovated** and is in the heart of the city, convenient to all car lines, depots and boat landings.

**Per Day. $1.50. H. H. JAMES.**

---

Low rates to Linwood Park, Vermillion, O., are offered during the summer months by the Nickel Plate Road. A delightful summer resort. 296–36

# CRANDALL'S PATENT PACKINGS.

**FOR STEAM, WATER AND AMMONIA.**

Not having been subjected to the injurious chemical action of boiling oil, outlast all others, and never melt and gum. We are constantly displacing other packings on Lake and Ocean Steamers, and can guarantee our goods for marine work. Ask the man offering "the same thing" to explain his process. He boils his goods in oil.

**Send for Descriptive Catalogue and Samples.**

**CRANDALL PACKING CO.**

New York, 136 Liberty Street. Chicago, 51 S. Canal Street. Main Offices and Works, PALMYRA, N. Y.

---

Paint your Vessels with **Superior Graphite Paint**

NO BLISTERING, CRACKING OR SCALING.

Made especially for Stacks, Decks, Sides, Hulls and Water Compartments.
Strictly anti-rust, and most durable and economical.

DETROIT GRAPHITE MFG. CO. 542 River St., Detroit, Mich.

WHITTON & BATES, Agents, 503 Perry-Payne Building, Cleveland, O.

---

## THE CUDDY-MULLEN COAL COMPANY

**DEALERS IN COAL.** Docks at Government Pier, Whiskey Island, and Adjoining Globe Dry Dock.

All fully equipped with Revolving Derricks; also, Lighter Carrying Derrick, and One Hundred Two and One-Half Ton Buckets.

Main Office, 81 Perkins Building, East Side of Main Street Bridge.
Dock Office, 127 West River St., Cleveland, Ohio. Telephone No. 8.

Boats Coaled Day and Night. Docks at Amherstburg and Sandwich, Ontario

---

## MULLEN-GATFIELD COAL CO.,

Dealers in the Celebrated

**MANSFIELD AND YOUGHIOGHENY COALS.**

Docks at SANDWICH, ONTARIO, opposite the Fort at Detroit, with chutes for rapid fueling. Elevated docks and derrick at AMHERSTBURG, ONTARIO.

---

## O. W. SHIPMAN DOCKS.

AMHERSTBURG, ONT.

Four Chutes and Low Dock.

Massillon and Youghiogheny **KOAL** Hocking . . .

Main Office, 90 Griswold St., DETROIT.

---

**The "CINCINNATI" Automatic**

**STEAM STEERING GEAR**

Simple, Powerful Machine. Noiseless and Sure. Send for Circular.

FRONTIER IRON WORKS, Detroit, Mich.,

AGENTS FOR THE LAKES.

---

# AMERICAN STEEL BARGE CO.

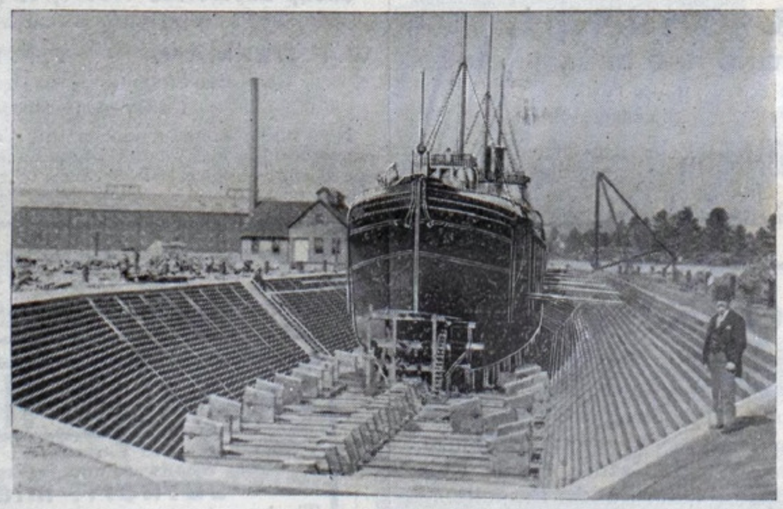
**STEEL AND METAL SHIPS**

OF ALL CLASSES BUILT ON SHORTEST POSSIBLE NOTICE AT OUR YARDS AT

**WEST SUPERIOR, WIS., and also at EVERETT, WASH.**

PHOTOGRAPH OF 300 FT. BOAT IN DOCK.

Plates and Material Always on Hand to Repair all kinds of Metal Ships in Shortest Time.



Best Quality of Oak in Stock for Repairing Wooden Vessels of all Classes.

SIZE OF DOCK

| | | | |
|---|---|---|---|
| Length, Extreme | 537 feet. | Entrance, Top, | 55 feet 9 in. |
| Breadth, Top, | 90 " 4 in. | Entrance, Bottom | 50 " |
| Breadth, Bottom | 52 " | Depth over Sills | 18 " |

LARGEST DRY DOCK ON THE LAKES.

PRICES FOR REPAIRS AND DOCKING SAME AS AT LOWER LAKE PORTS.

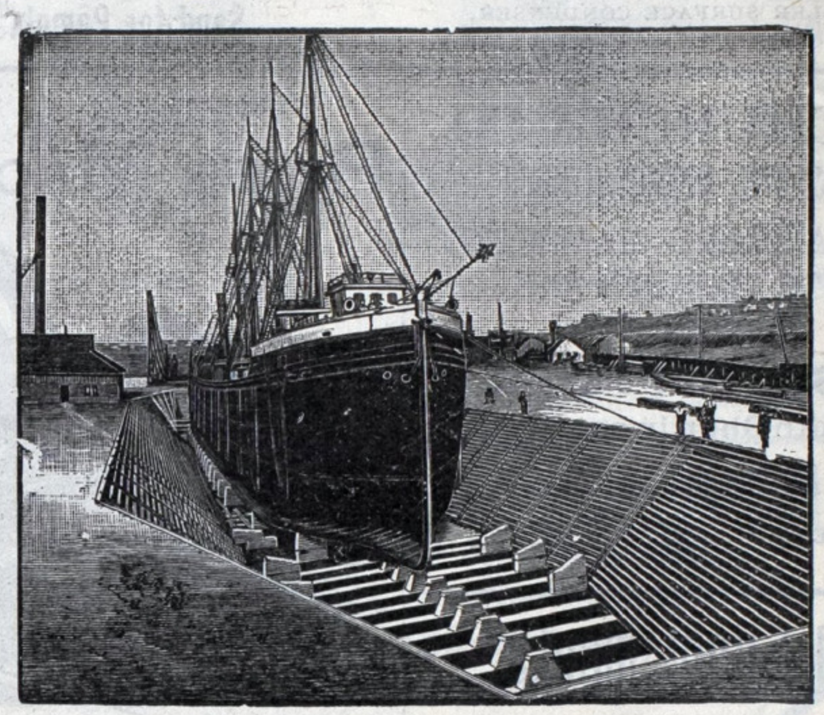
**SUPERIOR, WIS.**

A NUMBER OF PROPELLER WHEELS IN STOCK AT DRY DOCK.

---

# THE SHIP OWNERS DRY DOCK CO.

Largest DOCK YARD on the GREAT LAKES.



Capacity with Two Docks to Dock the Largest Ships on the Lakes.

**GENERAL REPAIR WORK PROMPTLY ATTENDED TO.**

Being equipped with Lucigen Lights we can do work at night as well as day.

TELEPHONE 1635. Foot of Weddell St., CLEVELAND, O.

---

ESTABLISHED 1857.
**THOMAS MARKS & CO.,**
Merchants, Forwarders and Ship Owners.
PORT ARTHUR, CANADA.
N. B.—Special attention given to chartering vessels.

Calvin Carr. G. C. Blair. John Mitchell.
**CARR & BLAIR**
VESSEL AND INSURANCE AGENTS,
Rooms 1 and 2. Tel. Main 869.
12 Sherman St. CHICAGO.

A. A. Parker. James W. Millen. B. W. Parker.
**PARKER & MILLEN,**
Vessel & Insurance Agents.
Iron Ore & Coal Cargoes a Specialty.
Rooms 3 & 4 15 Atwater St., West.
DETROIT, MICH.

C. F. Palmer. H. W. Cook. Capt. J. A. Calbick.
**Palmer, Cook & Calbick,**
Vessel Agents and Underwriters,
No. 6 Sherman Street, Chicago, Ill.
Telephone, Main 3952.

J. G. Keith. D. Sullivan.
**J. G. KEITH & CO.**
VESSEL AND INSURANCE AGENTS,
140 and 141 Rialto Bldg. CHICAGO.
Telephone No. 3658.

**JOHN PRINDIVILLE,**
VESSEL AND INSURANCE AGENT,
12 Sherman Street,
Telephone Main 129. CHICAGO.

---

## C. A. MACDONALD & CO.,

**GENERAL MARINE INSURANCE AGENTS.**

RIALTO BUILDING, CHICAGO, ILL.

---

## THOS. WILSON,

***MANAGING OWNER WILSON'S TRANSIT LINE.***

General Forwarder, Freight and Vessel Agent. CLEVELAND, O.

---

## C. R. JONES & CO., VESSEL AGENTS

FIRE AND MARINE INSURANCE.

**Nos. 501, 502 and 503 Perry-Payne Bldg., CLEVELAND, O.**

---

JOHN MITCHELL. JOHN F. WEDOW. ALFRED MITCHELL.

**MITCHELL & CO., Vessel and Insurance Agents,**

Office Telephone, 767.
Residence John Mitchell, 3506.

508-509-510 Perry-Payne Building,
CLEVELAND, O.

---

**BEESON'S DIRECTORY** for 1895 is now ready, Send orders to

Smith & Swainson, Cleveland, O.

PRICE $5.00; INCLUDING SUBSCRIPTION TO THE MARINE RECORD $6.00.